OLOGY DEPT.

CORONATION NUMBER

Gas Journal

Vol. 274. 105th Year. LONDON, MAY 27 1953 Price 2/6
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WHESSOE LIMITED
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A bird's-eye view of 14,000,000 cubic feet per day

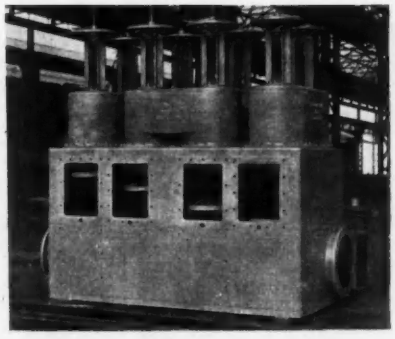
THAT is the capacity of these four "DONKIN" Gas Compressors, installed at Nantgarw Coke Ovens of the N.C.B., South Western Division, with foundations for another machine to pass a further 6,000,000 cubic feet per day.

★

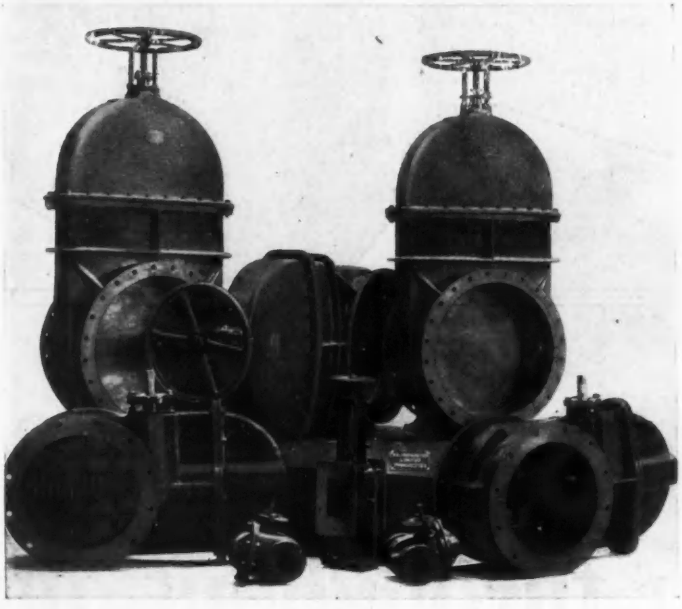
RELIABILITY, STURDINESS AND FIRST-CLASS WORKMANSHIP are the keynotes of these machines, which are required to withstand long periods of continuous operation. When requiring a Gas Compressor be sure to get more than a bird's-eye view of a "DONKIN" unit. Let our engineers show you the picture from all angles.

The **BRYAN DONKIN** COMPANY LIMITED
CHESTERFIELD
LONDON · MANCHESTER
— Members of the Society of British Gas Industries —

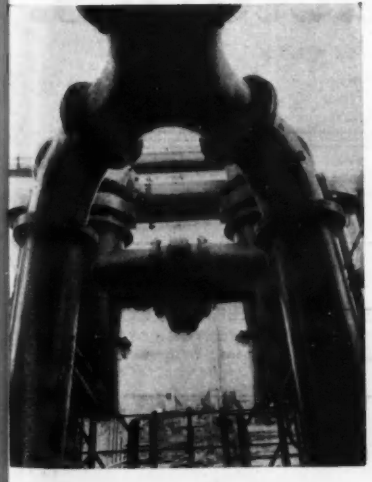
Aids to production



GAS VALVES



& CONNECTIONS



BY

R. & J.
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Constructional Gas & Chemical Engineers

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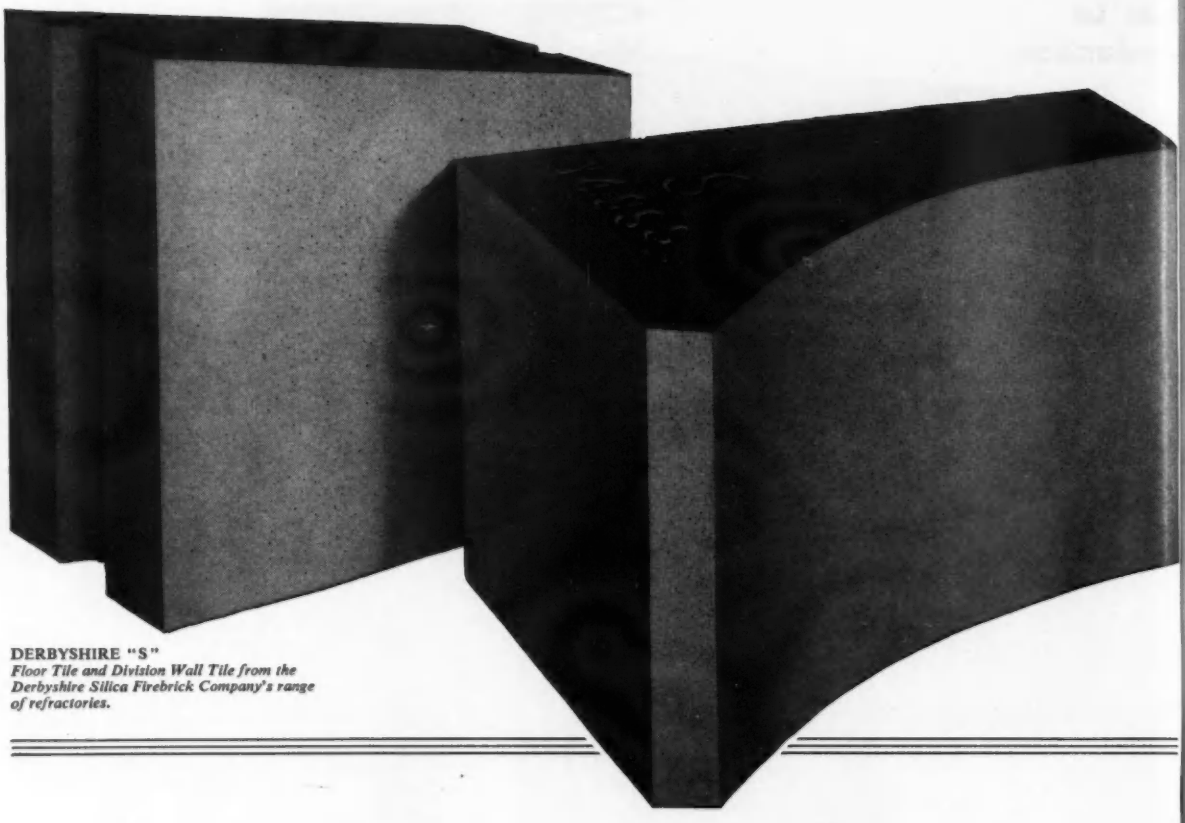

DERBYSHIRE "S"
Floor Tile and Division Wall Tile from the Derbyshire Silica Firebrick Company's range of refractories.

DERBYSHIRE SILICA—the name known throughout industry for first class refractories.

DERBYSHIRE "S" and "D.S.F."
(*90% Silica*)

Refractories for all purposes including Vertical and Horizontal Retorts, Soakers, Puddling Furnaces, Reheating and Annealing Furnaces, Forge Furnaces, Checkers, Cupolas and Glass Furnaces.

Other D.S.F. products include
PEAKSIL (*95% Silica*) FRISIL (*Sillimanite*)
DUROSIL
(*The new British Plastic Refractory*)
and DOME INSULATION (*Diatomite*)

DSF
DERBYSHIRE SILICA FIREBRICK CO., LTD.
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PRODUCED specifically for industrial meter connections this rotary valve is based on the standard "Towndrow" valve design.

It can be supplied for 1", 1½", 2", 3" and 4" bores with screwed ends, flanged ends or socket and spigot connections.

We shall be pleased to send a sample on request.

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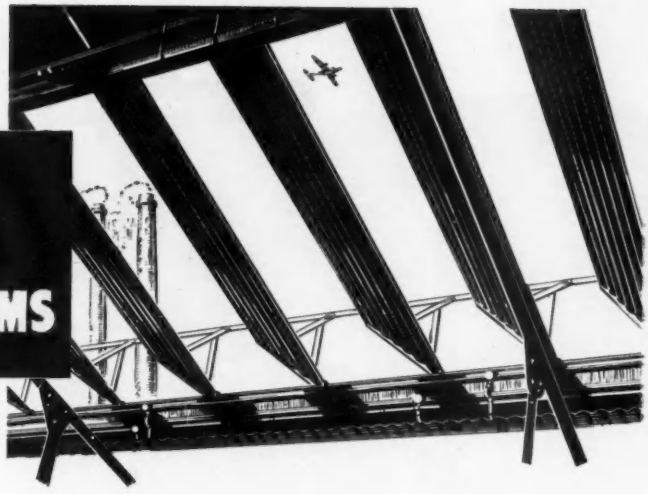
How

HILLS
VENTILATING SYSTEMS

Help..



THE WORKER

Where fumes, smoke, steam and excessive heat result from manufacturing processes—in Foundries, Retort Houses and Furnace Buildings—the great thing from the workers' point of view is to clear the air rapidly. No other system offers such rapid and efficient ventilation as Hill's Patent Roof Ventilating Shutters. They provide what is virtually a moveable roof to the building, and at the touch of a button they can be opened up to an angle of 65 degrees in 60 seconds—drawing off heat and fumes, and letting in fresh air and unobstructed daylight—a great and immediate relief to workers in hot or humid shops.

THE MANAGEMENT

Good ventilation is a sound investment on the part of the management, because good working conditions are conducive to good workmanship, and efficient ventilation reduces fatigue and absenteeism and leads to increased production. In addition to their greater efficiency, Hill's Ventilating Shutters offer the most economical system of ventilation, require negligible maintenance, effect a considerable saving in artificial lighting and glass-cleaning, and can be installed in old or new buildings.

THE ARCHITECT

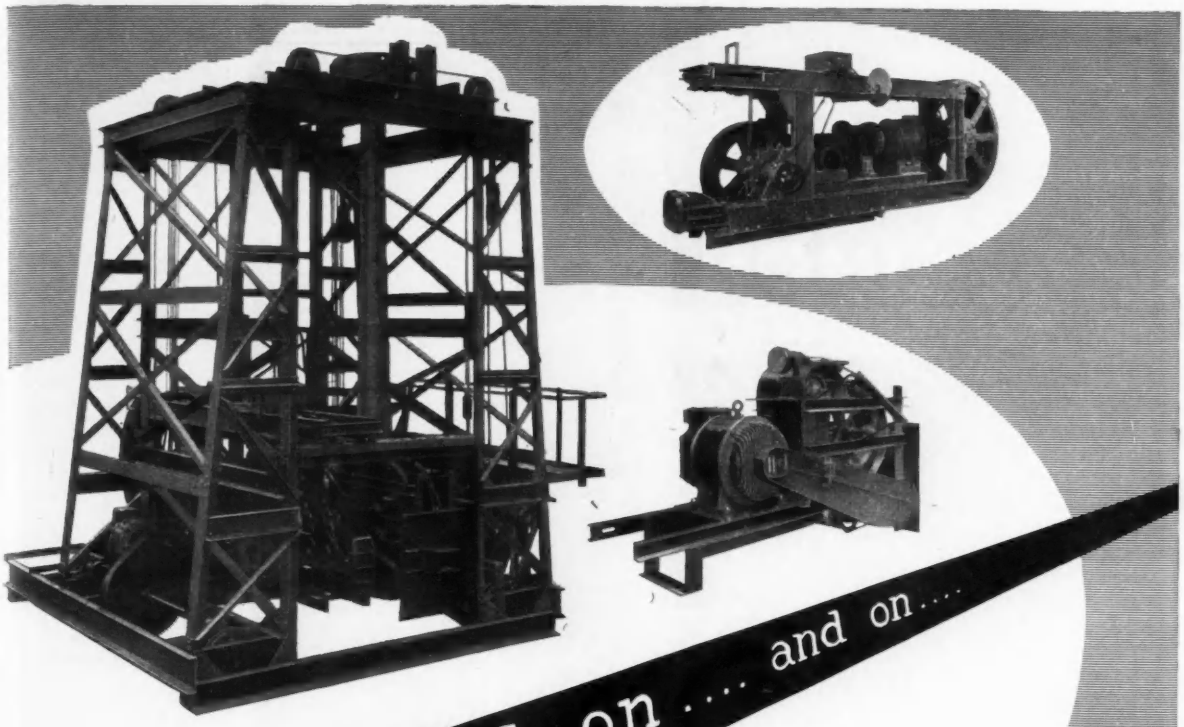
Architects who specify, and builders who install, industrial ventilating systems must obviously insist on those of proved efficiency and reliability. Proof of the high reputation of Hill's Ventilating Shutters is to be found in the fact that they have been installed in many of the best-known organizations throughout the country. Architects and Builders are assured of the whole-hearted co-operation of our Technical Advisory Department at all times.

HILLS INDUSTRIAL VENTILATORS

In addition to Ventilating Shutters, Hill's Industrial Ventilators include STACK ROOF VENTILATORS and WALL-TYPE AIR INLET VENTILATORS. For expert advice on installing efficient ventilation in a new or existing building, we invite you to consult our Technical Advisory Department. Literature gladly sent on request.

HILLS (WEST BROMWICH) LIMITED, ALBION ROAD, WEST BROMWICH. Tel.: West Bromwich 1025 (7 lines).

London: 125 High Holborn, W.C.1. Tel.: Holborn 8005/6. Branches at Birmingham, Bristol, Manchester, Newcastle-on-Tyne, Glasgow and Belfast.



on .... and on .... and on ....

Proof—if proof be needed—of "R. & B." leadership in design and construction, is the fact that in several reconstruction schemes, instead of being scrapped, "R. & B." machines have been transferred to other Retort Houses and Works. In one case a machine installed in 1923 was later transferred and is still working; in another a machine installed in 1935 was transferred in 1951.

frequently outlasting the installations for which they were originally supplied

R&B

Stoking Machines

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THIS SIGN appears in the advertising of a number of firms, which between them provide a wide range of technical services to industry at home and overseas. Behind these services are extensive scientific resources and the experience and reputation of more than seventy years.

FOR THE COKE & GAS INDUSTRIES:

coal preparation plants and colliery surface equipment
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complete gasworks ancillary plants for effluent liquor treatment, liquid purification (H_2S removal), sulphur recovery, etc.

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and associated companies in Europe, Australia, New Zealand, South Africa and South America.

they LOVE this 'BABY'!

CAREER GIRLS, BACHELORS, NEWLYWEDS—they all love the Junior General Gas Cooker, because however small their living-space it puts real meals within their reach. Hardly bigger than a radio set, there's practically nothing it can't do: it boils, roasts, grills and bakes in its versatile quick-heating oven. No more queues of pots and pans waiting for the gas ring; instead, a *real* breakfast in a hurry—after work, friends to supper and a hearty meal to give them.

General Gas Appliances Ltd. created the Junior General Cooker in response to the growing post-war demand of families who lack space for a full-size cooker. It gives a *complete* answer to their cooking problems.

JUNIOR GENERAL GAS COOKER

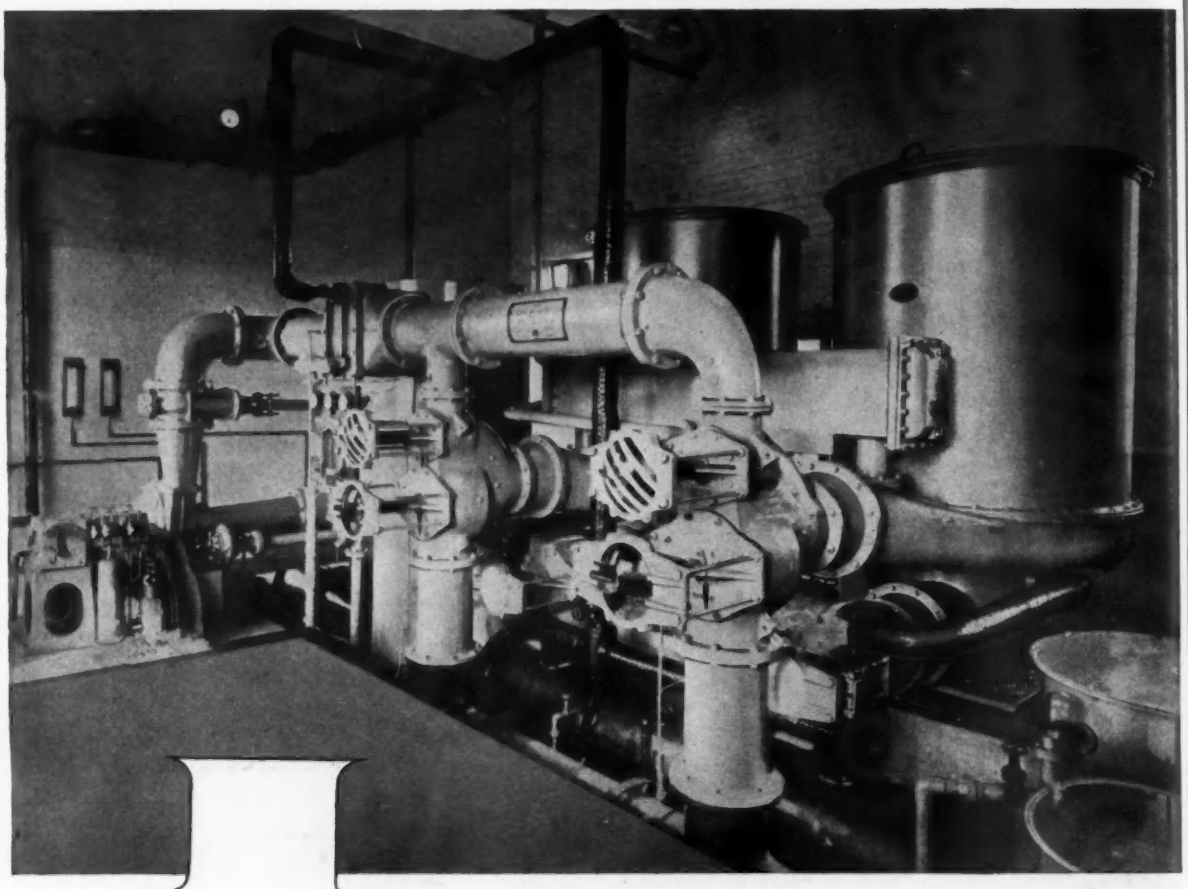
Made by

GENERAL GAS APPLIANCES LTD., CORPORATION ROAD, AUDENSHAW, MANCHESTER

(Proprietors: Allied Ironfounders Ltd.)

FIGURES WORTH NOTING . . .

"One-man" and "one-woman" families now number nearly one-and-a-half million.



100% recovery of Benzole

HAS BEEN RECORDED

100% recovery of Benzole has been recorded in the Gas Industry where Sutcliffe Speakman plants of the type illustrated are already installed.

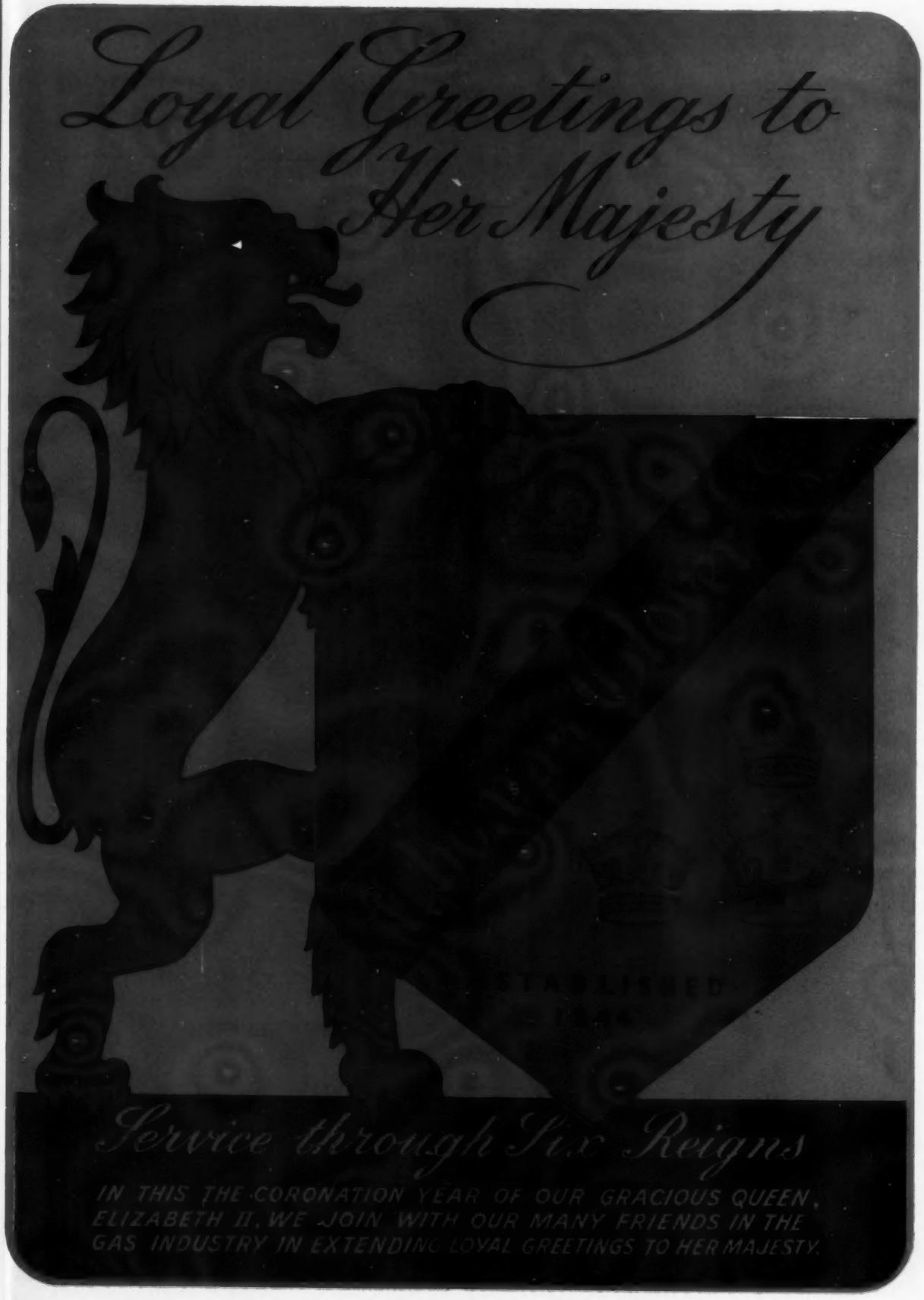
These recovery plants are the result of over twenty years' experience in the manufacture and industrial use of Active Carbon. Their capacities range from 250,000 cu. ft. per day. Entirely automatic and with few moving parts, they are compact, clean in operation, and economical to run. Their initial cost, too, compares favourably with that of other recovery systems. In every way they are the most profitable investments. We are always ready to draw up a complete balance sheet for Benzole recovery in any specific undertaking of the Gas Industry.

to cut Benzole wastage to a minimum, consult

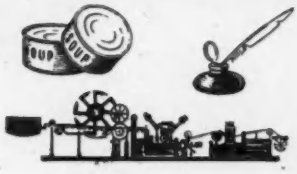
SUTCLIFFE SPEAKMAN

SUTCLIFFE SPEAKMAN AND COMPANY LIMITED, Leigh, Lancashire

Telephone: Leigh 94. London Office: 2 Caxton Street, Westminster, S.W.1. Telephone: ABBEY 3085


Loyal Greetings to Her Majesty
Service through Six Reigns
IN THIS THE CORONATION YEAR OF OUR GRACIOUS QUEEN, ELIZABETH II, WE JOIN WITH OUR MANY FRIENDS IN THE GAS INDUSTRY IN EXTENDING LOYAL GREETINGS TO HER MAJESTY.

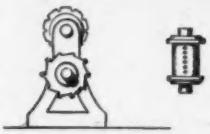
Through Eight Reigns



1803

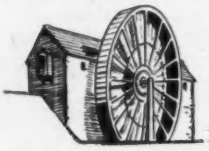
Bryan Donkin, F.R.S. (Founder), perfected and manufactured in 1804 the first continuous Paper-making Machine; patented the first Steel Pen Nib (1808); perfected the process of canning food.

1760 — 1820
GEORGE III



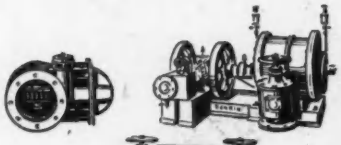
Bryan Donkin awarded Royal Society's "Isis" Gold Medal for a Revolution Counter. He designed and made a "Rose Engine", still extant, for manufacturing dies for printing bank notes. Awarded Royal Society's Gold Medal.

1820 — 1830
GEORGE IV



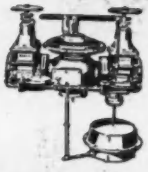
Improved on machinery for making nails and tacks, and built machinery for making gun barrels. Constructed 76-ft. diameter Water Wheel for paper mill in Florence. Also 18-ft. diameter iron Water Wheel.

1830 — 1837
WILLIAM IV



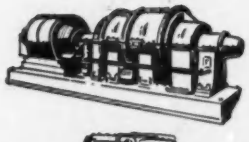
The Bryan Donkin Company started contracting to the Gas Industry. Designed and manufactured (1847) Rack and Pinion Valve. Three-blade Gas Exhauster made by the Company in 1847. Manufactured the "Farey" horizontal compound Steam Engine.

1837 — 1901
VICTORIA



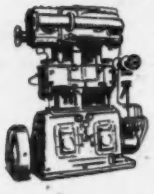
Removed to larger and more modern works. Commenced in 1905 the manufacture of "Reynolds" District Gas Governors and also Appliance Gas Governors.

1901 — 1910
EDWARD VII



Manufactured High Pressure Gas Distribution Plant and Centrifugal Pumps. Introduced into this country high speed Rateau Turbo Gas Exhausters and Boosters.

1910 — 1936
GEORGE V



Developed Vertical Reciprocating Gas Compressors; Retort House Governors. Volumetric Governors for gas grids. Automatically operated Boosters, Valves and Governors for Gas Control Stations.

1936 EDWARD VIII

1936 — 1952
GEORGE VI

Works expansion, extensive re-tooling, modern methods of manufacture. New and improved designs of Turbo Boosters, Compressors, Valves and Governors.

1953

ELIZABETH II

150 Years of Engineering

THE BRYAN DONKIN COMPANY LIMITED

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160 Years of Progress

IN NINE GLORIOUS REIGNS

NEWTON CHAMBERS

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PIPES CARRIED THE GAS

to public and domestic fittings upon which the full force of the Victorian metal workers' art had been lavished. From those early days of the "new gas light" right up to the present moment Staveley pipes have maintained their leadership in serving the gas, water and sewage disposal requirements of communities at home and abroad.

THE STAVELEY IRON & CHEMICAL CO. LTD. NR. CHESTERFIELD

Salute to a New Era

AFTER nearly 40 years of world-conflict, trial and tension, the nation acclaims the enthronement of a new Sovereign, and looks hopefully for the commencement of an era of ordered progress, to which British industry with its skill, inventiveness and integrity can be relied on to make its full and essential contribution.

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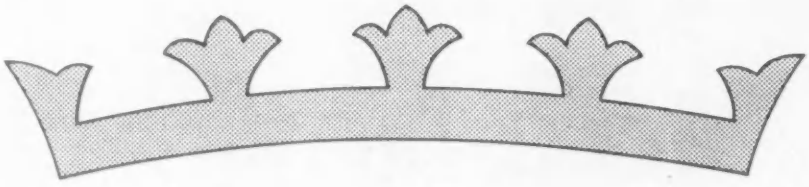
TOTTENHAM, N.17
Telephone: TOTtenham 8171/6
Telegrams: Unwater, Southtot, London

40 YEARS' SERVICE TO THE GAS INDUSTRY THROUGHOUT THE COUNTRY.



Long Live Elizabeth

May the years ahead be long and venturous . . . . may they see the fulfilment of many of our national aspirations. May they be years of peace and growing understanding among the nations.

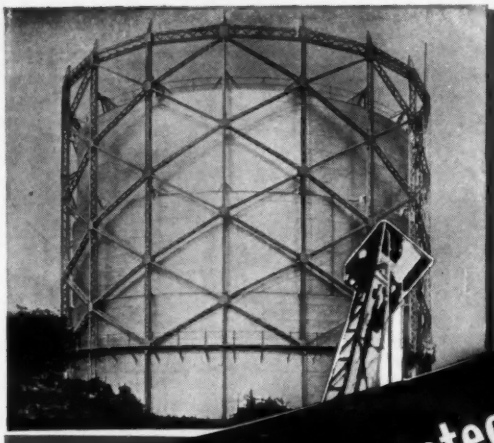
May they be years of peace and reconciliation within our own economy.

May they be years of progress . . . . not only in our twentieth century techniques, but towards a higher idealism. May they be years of plenty . . . . a plenty in which we all share, and which we share with all.

Long Live Elizabeth

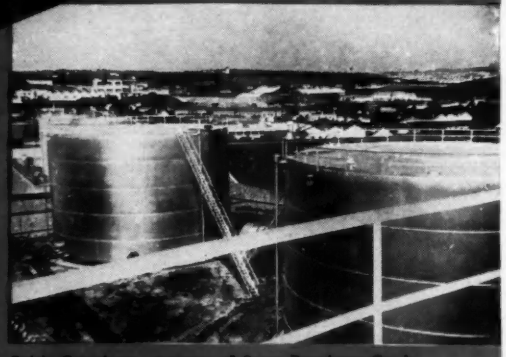
May we, too, play our part.

Issued in reaffirmation of our common loyalty by **HUGH WOOD & CO. LTD.**



Gasholder in Kent showing brilliance of Atlas Ruskilla Aluminium Paint.

For the protection of metal structures



Spirit Containers, property of Sacor Petroleum Co. in Portugal, coated with "Atlas Ruskilla" Aluminium Paint. High reflectivity of this paint reduces effects of solar heat and consequent loss of spirit by evaporation.

ATLAS RUSKILLA Iron and Steel Preservative Paints have been specifically designed for the enduring protection of all types of structural work. They embody over half-a-century of specialised experience in the manufacture of anti-corrosive paints, and their stamina has been proved in every part of the world. Let us send you Shade Card and prices.

For economy's sake, order or specify . . .

ATLAS RUSKILLA

IRON & STEEL PRESERVATIVE PAINTS

The Paints of Stamina!

ATLAS PRESERVATIVE CO. LTD., ERITH, Kent. 'Phone: ERITH 2255 (5 lines) 'Grams: Deoxydizer, Erith.

TAS/AS 76

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REPAIRS AND
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ESTABLISHED OVER 70 YEARS

CROSBY & CO. LTD.
LION WORKS, FARNHAM, SURREY

Lift Frame Guided Gasholder and Steel Tank, 3,000,000 cu. ft.
MELBOURNE, AUSTRALIA

GASHOLDERS
GUIDE FRAMED
SPIRAL
WATERLESS
HIGH PRESSURE
REPAIRS AND
INSPECTION

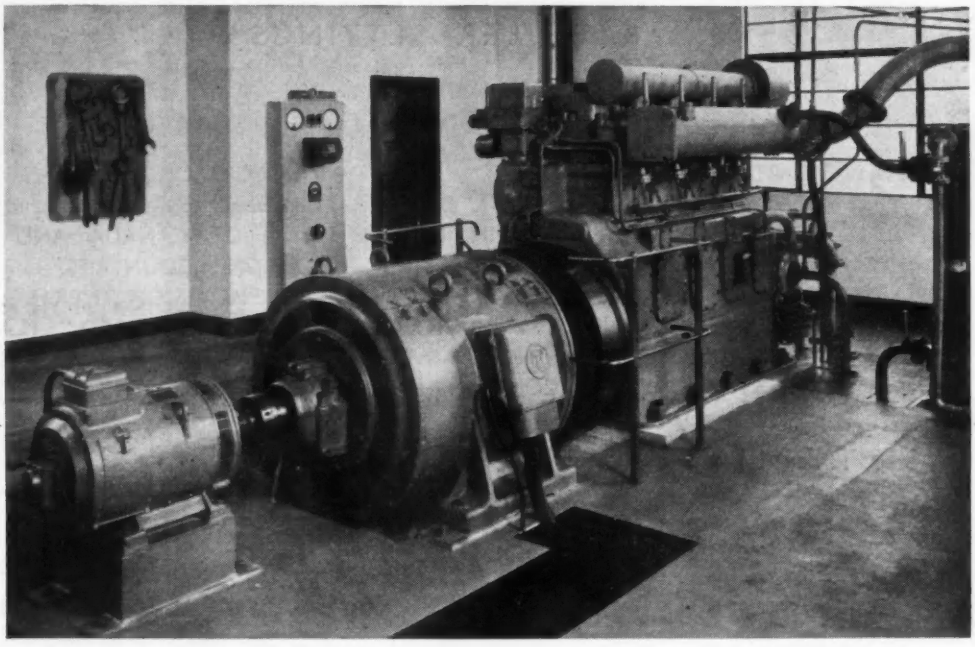
80 Years Experience

UNEQUALLED SERVICE

CLAYTON SON & CO., LTD.
HUNSLET, LEEDS, 10.

GASHOLDERS & TANKS
OF ANY SIZE AND DESIGN
RIVETTED OR WELDED

Diesel Generating Plant for the Channel Islands



The total capacity of 'ENGLISH ELECTRIC' generating plant installed and successfully operating in the Channel Islands is now well over 10,000 b.h.p.
A recent 'ENGLISH ELECTRIC' installation is of a type 4 RK diesel alternator set made for the States of Guernsey Water Works Department to operate in their St. Saviour's Works. The equipment illustrated here consists of a 4 cylinder naturally aspirated type RK diesel engine developing 267 b.h.p., coupled to a 180 kW alternator and exciter which generate a 400 volts 3-phase, 50 cycle supply for operating large motor-driven centrifugal pumps.
The supply is taken through an existing interlocking switch to the busbars of the main station feeder panel.
The complete generating plant and exciter cubicle, which can be seen at the rear of the illustration, are of 'ENGLISH ELECTRIC' manufacture.

'ENGLISH ELECTRIC'

diesel engines

THE ENGLISH ELECTRIC COMPANY LIMITED, QUEENS HOUSE, KINGSWAY, LONDON, W.C.2

Diesel Engine Division, Brownsover Hall, Rugby. Telephone : Rugby 2278

WORKS: STAFFORD · PRESTON · RUGBY · BRADFORD · LIVERPOOL · ACCRINGTON

DES.28

CARBONISING PLANT

HORIZONTALS VERTICALS INCLINES

& BOILER SETTINGS

A GOOD PLANT IS BEST PROTECTED BY H.M. LETTERS PATENT, SO WE HAVE EVOLVED PATENTS FROM TIME TO TIME, ON REGENERATORS, AND STEAM BOILER SETTINGS.

OUR LATEST PATENTS ALL IN CONNECTION WITH VERTICAL CARBONISING PLANT ARE BRIT. PAT. No. 591200. BRIT. PAT. No. 576701. BRIT. PAT. No. 576289. BRIT. PAT. No. 555024. WE HAVE PATENTS EFFECTUAL ALSO IN THE DOMINION OF CANADA AND THE COMMONWEALTH OF AUSTRALIA BESIDES SOME FOREIGN COUNTRIES. THUS "STANDARD" SAFEGUARD AND ENSURE MODERN EQUIPMENT OF THE HIGHEST EFFICIENCY FOR THE GAS INDUSTRY OF THIS NEW ERA. "STANDARD" PLANTS OCCUPY A FORWARD POSITION IN THE GAS WORKS OF THE BRITISH ISLES AND HAVE DONE SO SINCE THE DAY THE COMPANY WAS ESTABLISHED IN THE YEAR 1912.

THE STANDARD FURNACE & SETTING CO., LTD.

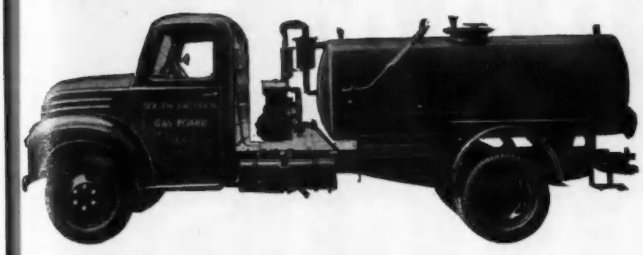
CONSTRUCTIONAL GAS ENGINEERS

SOUTHPORT

PHONE: SOUTHPORT 2184. GRAMS: STANDARD FURNACE SOUTHPORT.

ALLAN TAYLOR

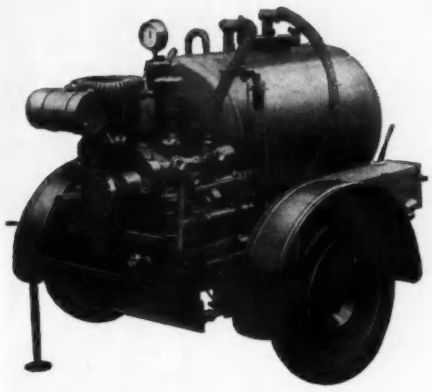
MAINTENANCE OUTFITS FOR GAS COMPANIES



SYPHON EMPTYING OUTFIT

The vacuum syphon emptying outfit illustrated is mounted on a 4-ton Fordson chassis. A 600 gallon galvanised tank is fitted. A rotary type exhauster is driven by a 4 h.p. four-stroke air cooled engine, mounted on a sub-frame behind the cab. The tank is fitted with a flame-proof vent and the outfit can be used for high or low pressure syphon emptying. A large manhole at the rear allows the tank to be cleaned easily.

A sight glass is fitted to enable the operator to know when the syphon is emptied. Twenty-five feet of 1½ in. suction hose is supplied with the outfit. The outfit can be used for vacuum or pressure working.



SERVICE PIPE CLEARING OUTFIT

Trailer model fitted with 75 gallon galvanised tank and a 3 b.h.p. engine driving an exhauster. Vacuum or pressure can be obtained by moving a single lever. Safety valves are employed and come into operation when pressure in the tank reaches 8-10 lbs. The tank is tested to 30 lbs. A 27 in. vacuum is obtained in 2 minutes.

The outfit can also be used for emptying syphons and an automatic liquor valve is fitted to prevent the liquor reaching the exhauster. In addition to the vacuum and pressure gauge a sight gauge is fitted to enable the operator to see at a glance the exact amount of contents in the tank. Sixty feet of 1 in. hose and necessary couplings supplied with each outfit.

Full particulars and illustrated pamphlet sent on request

ALLAN TAYLOR (Engineers) LTD.
WANDSWORTH HIGH STREET, LONDON, S.W.18
Telephone : VANdyke 4433 (Five lines)

COKE RECOVERY FROM PAN ASH & COKE BREEZE WASHING

by the dual purpose improved

"RETRIEVER"
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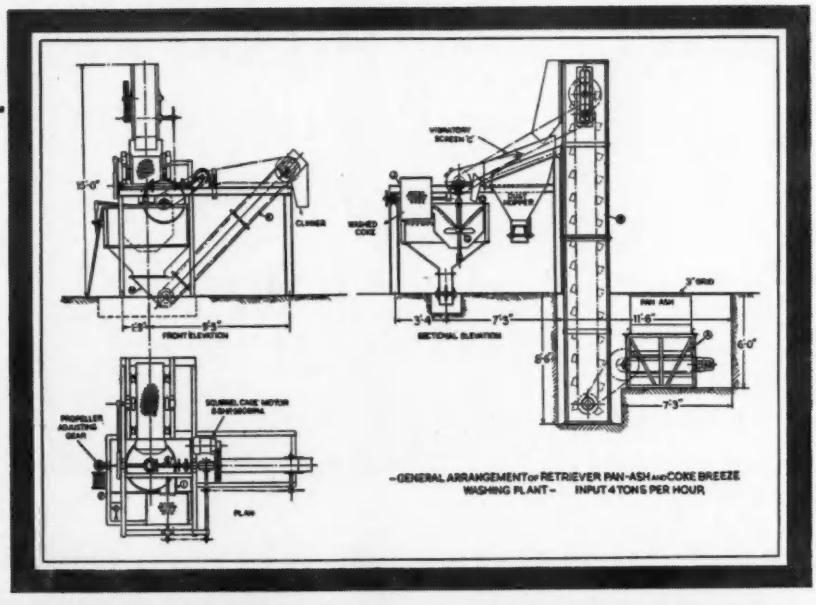

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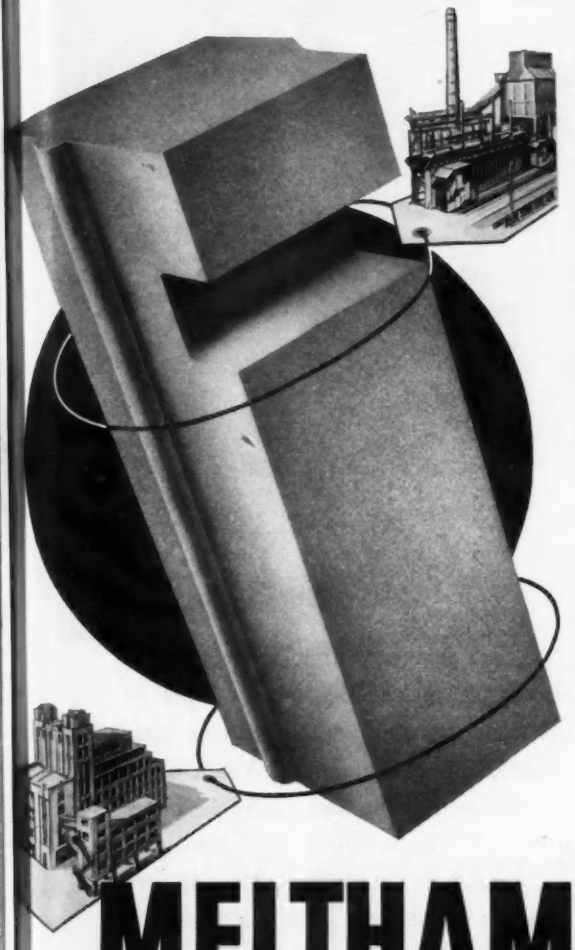

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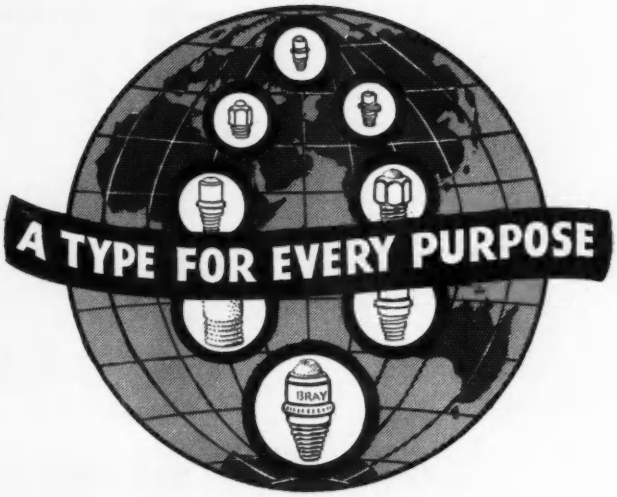

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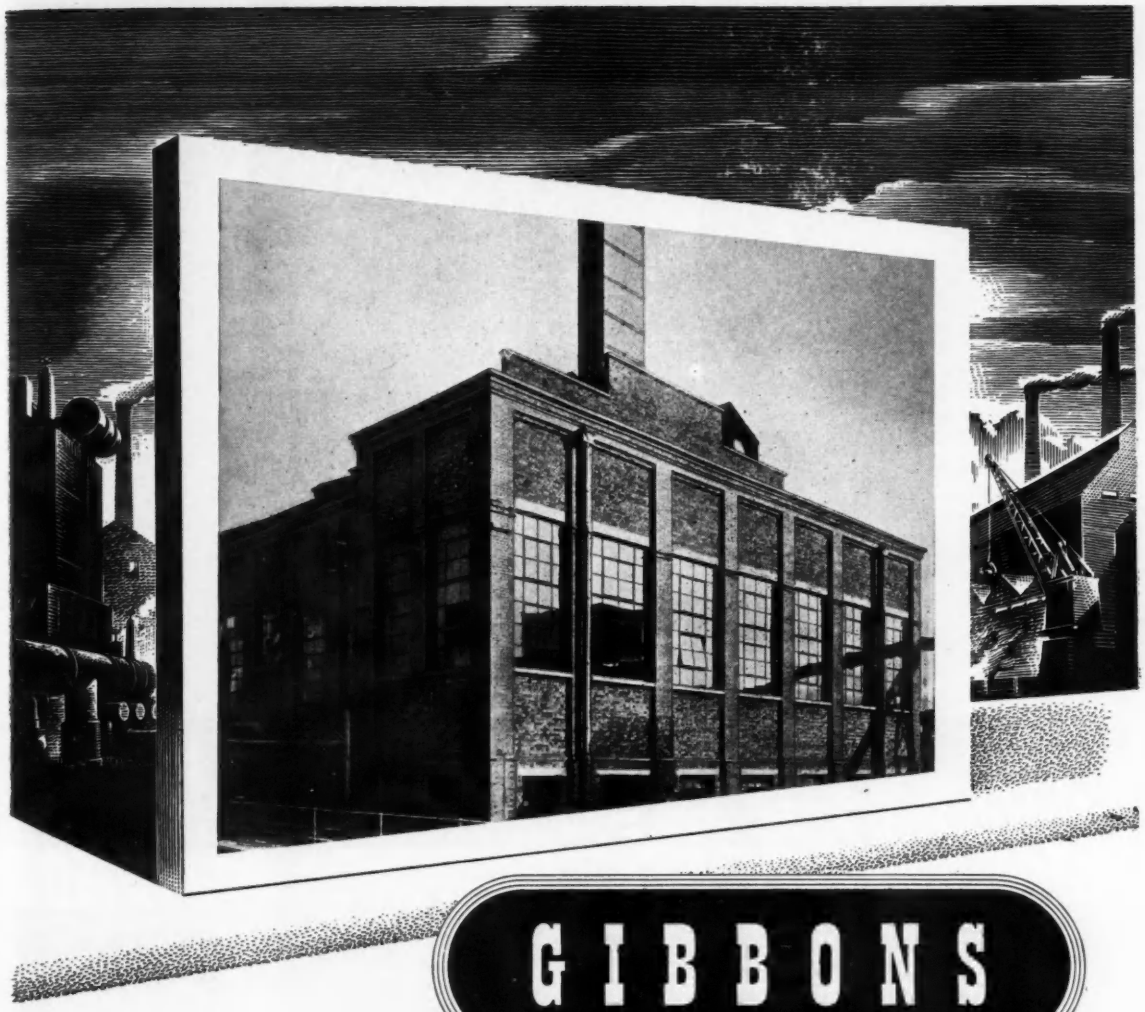

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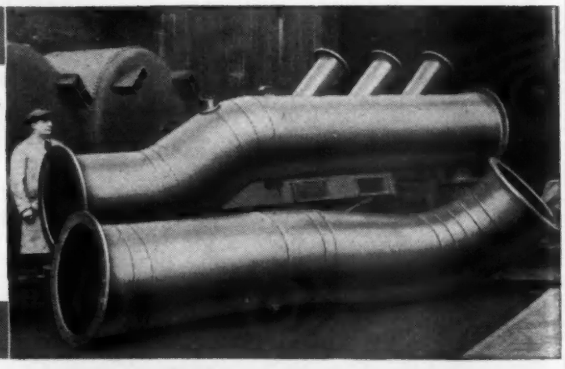

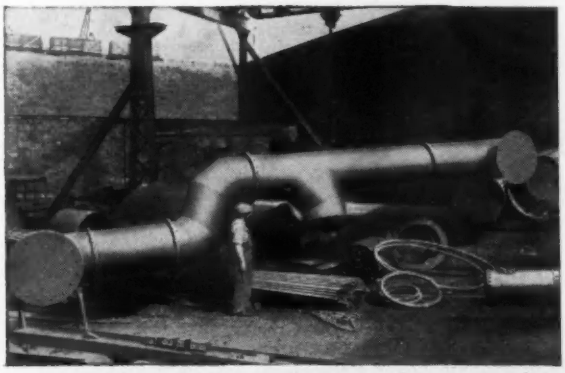

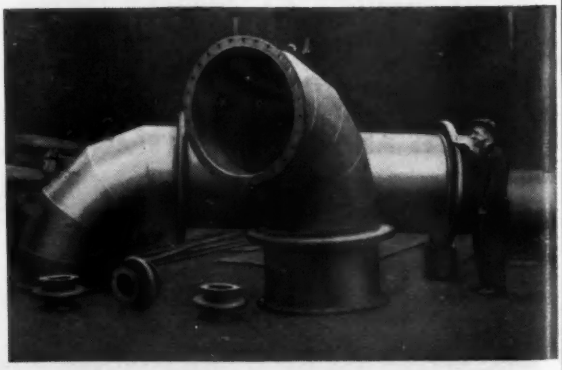

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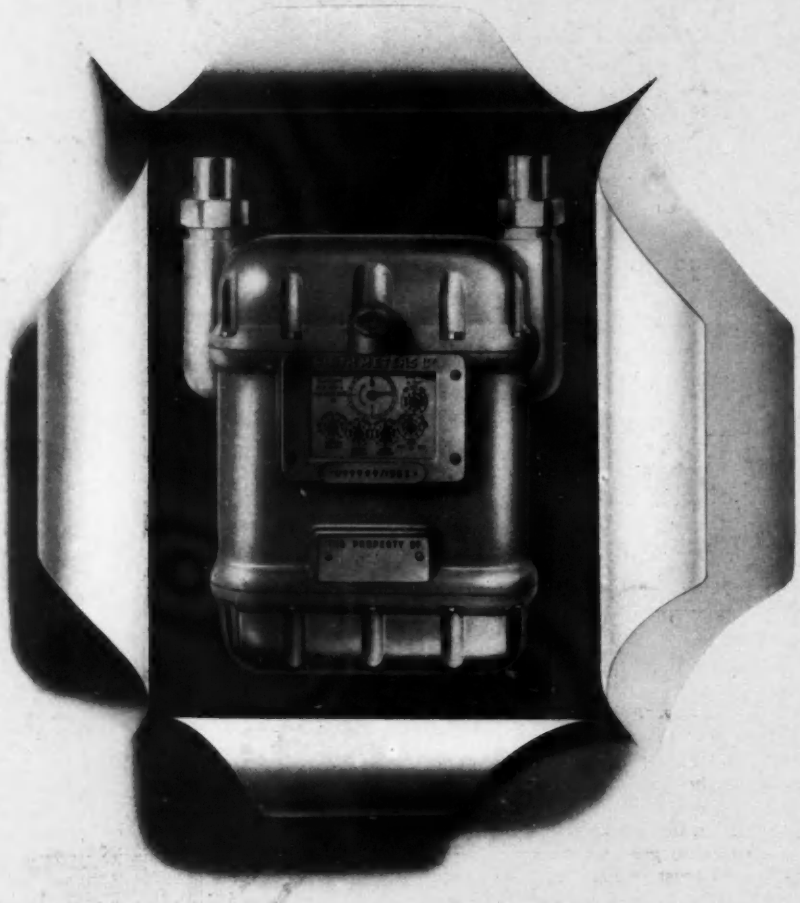

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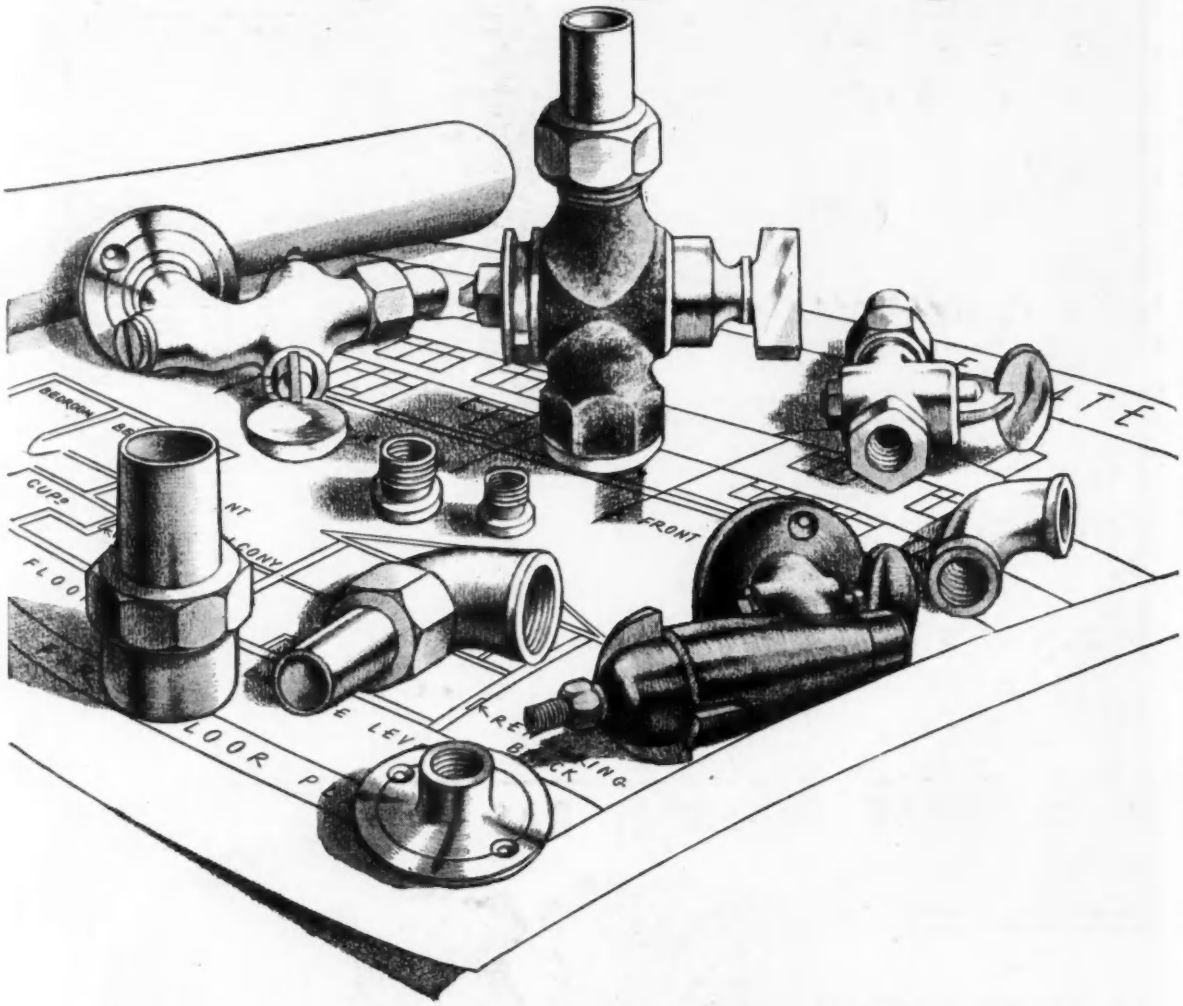

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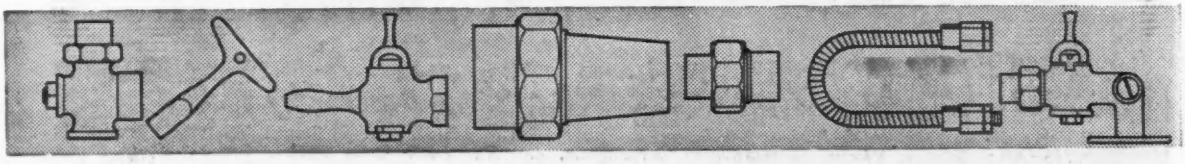

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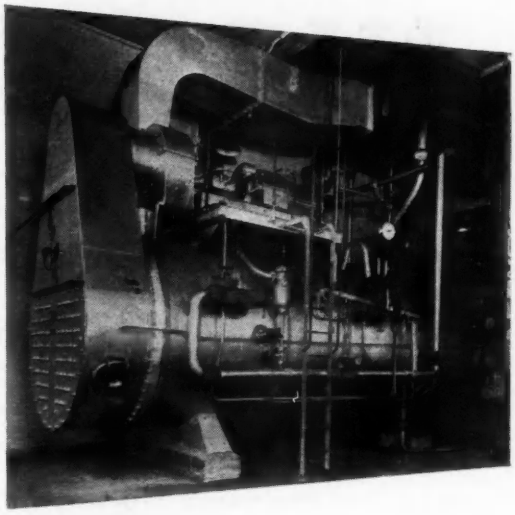
Waste Heat Recovery Plant



The illustration shows one of the Six Waste Heat Boilers installed at the Howdon-on-Tyne Gasworks—Northern Gas Board. Photograph by courtesy of Messrs. Gas Chambers & Coke Ovens Ltd.

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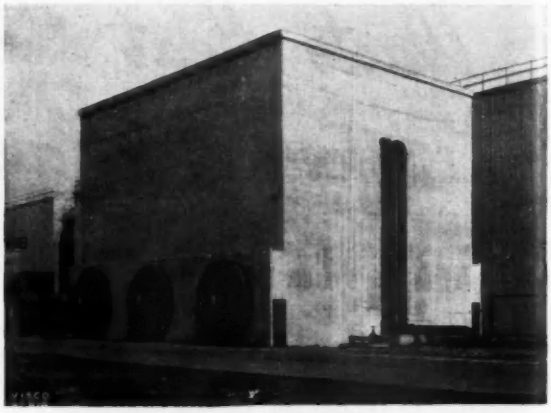

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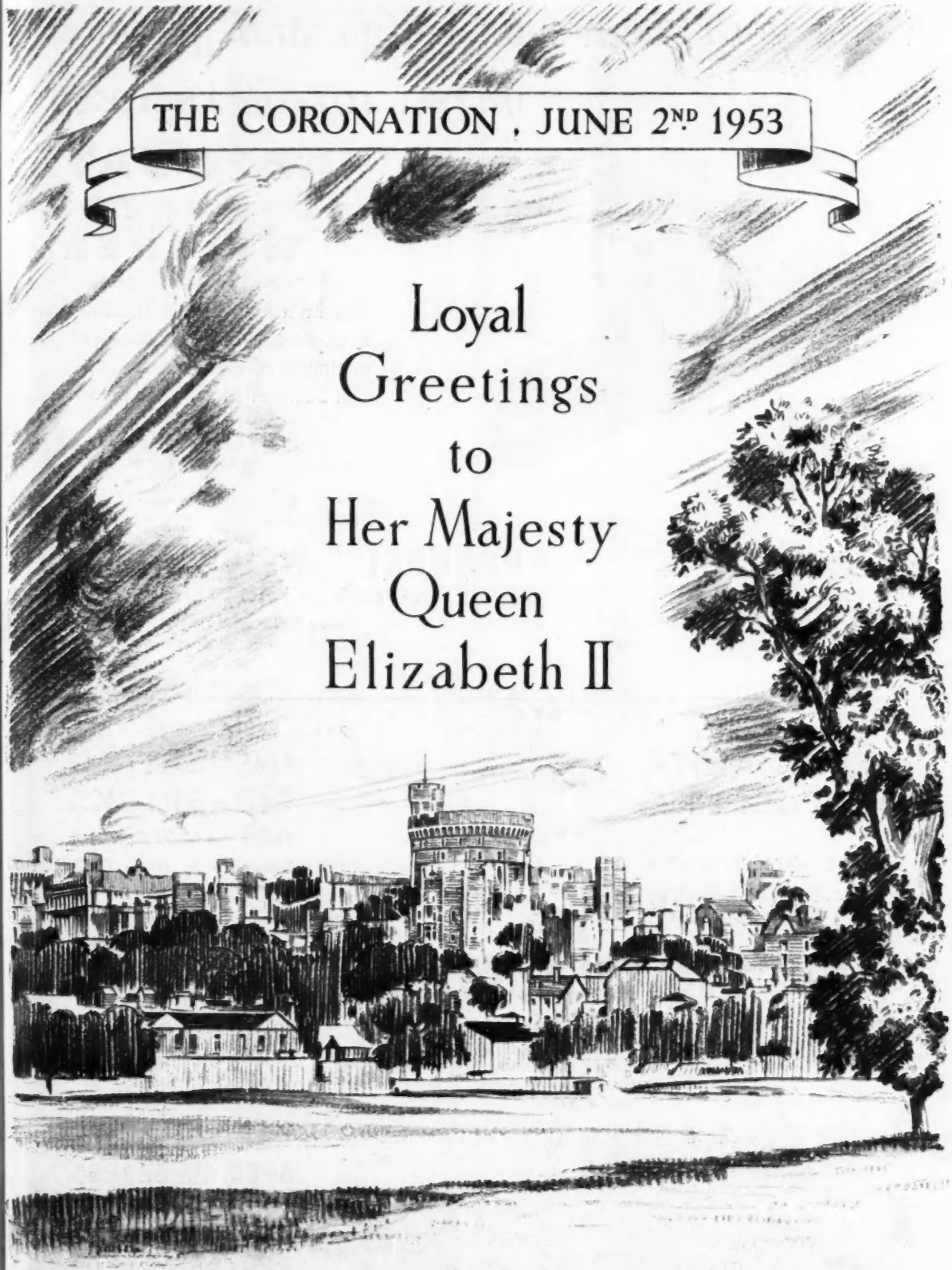

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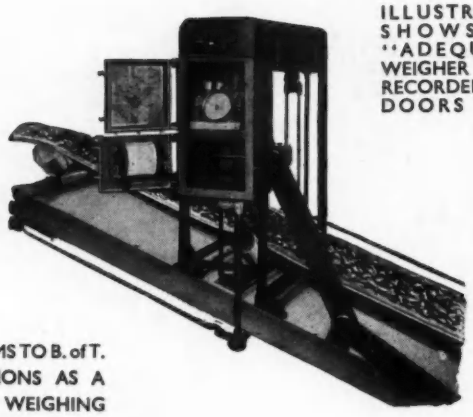

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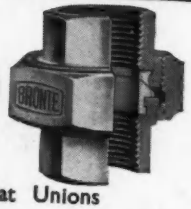

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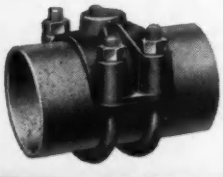

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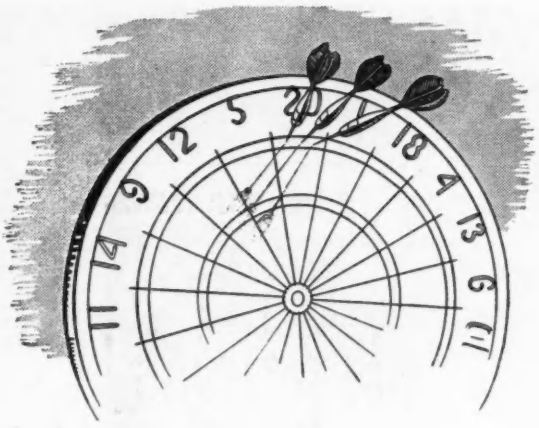

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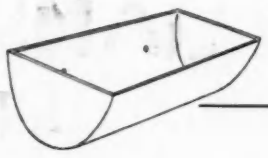

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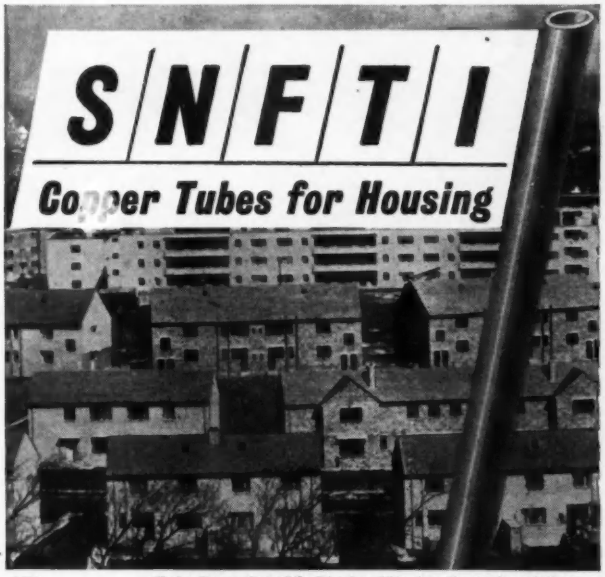

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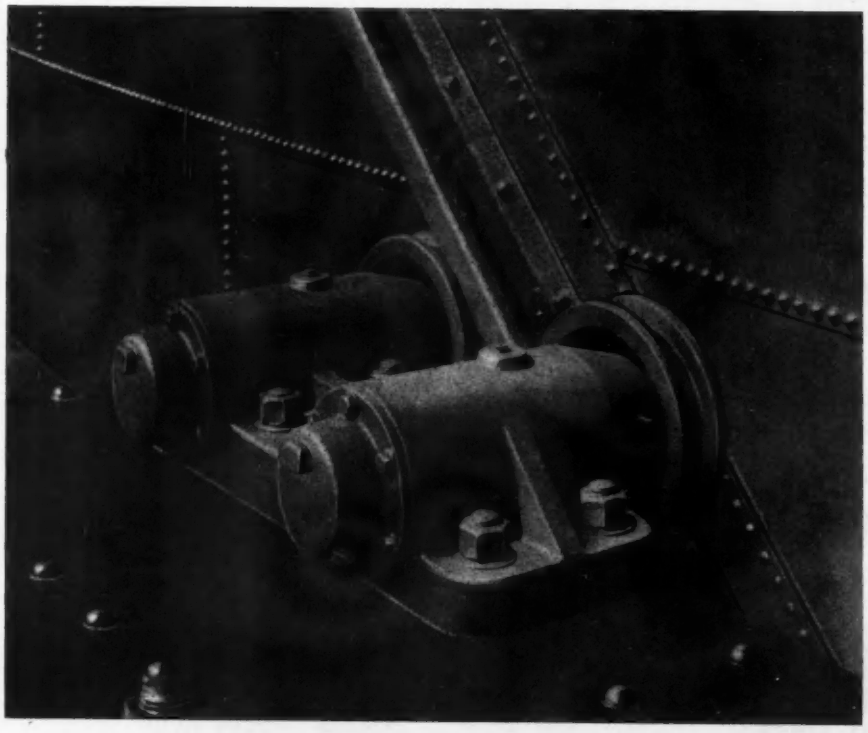

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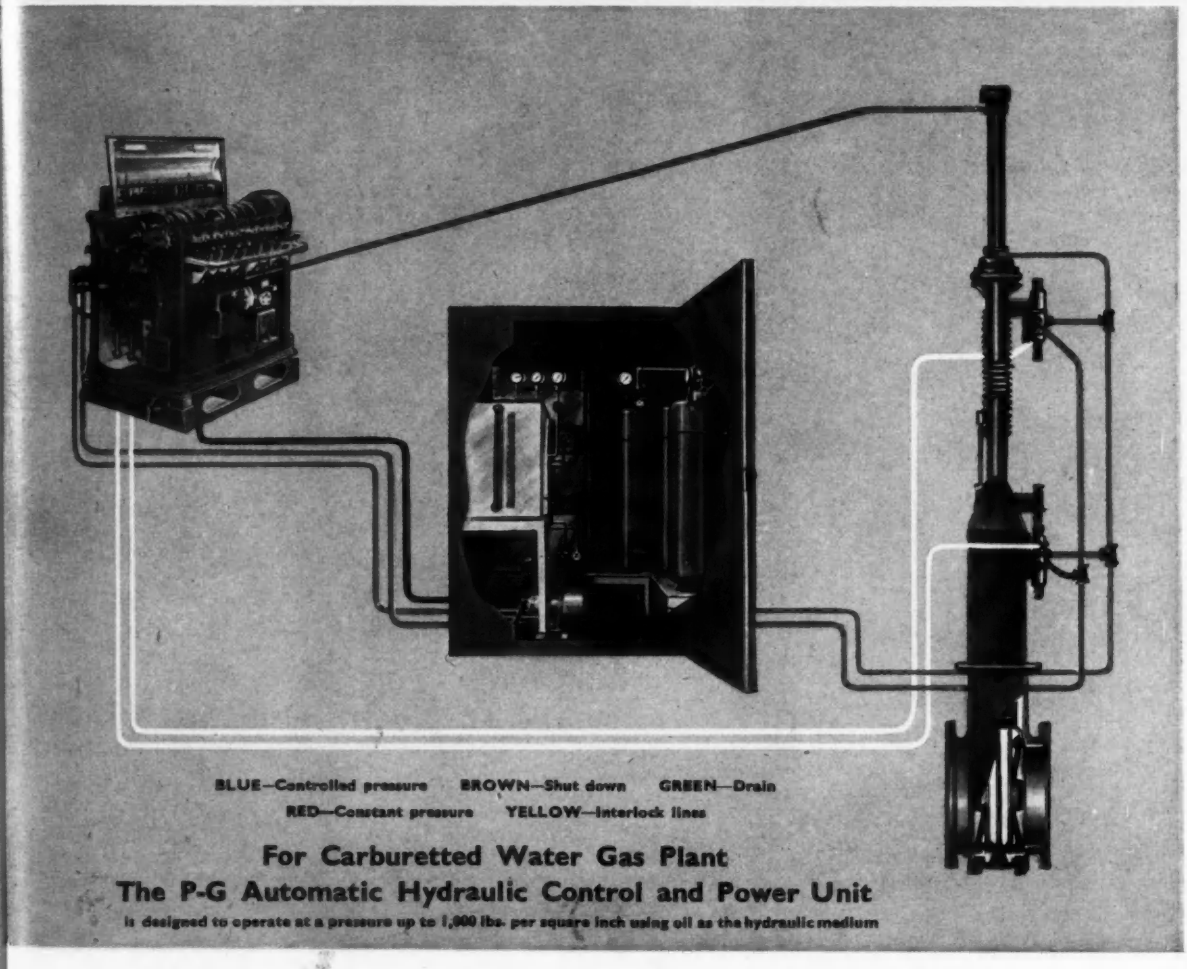

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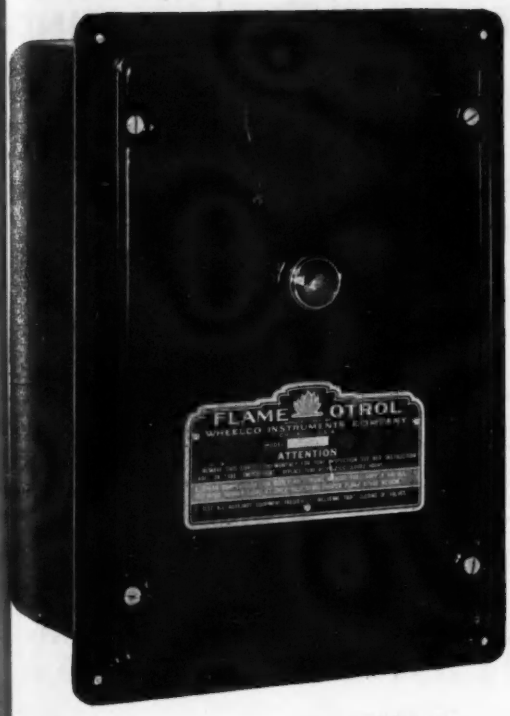

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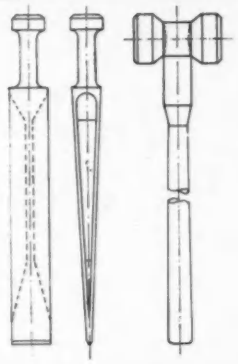

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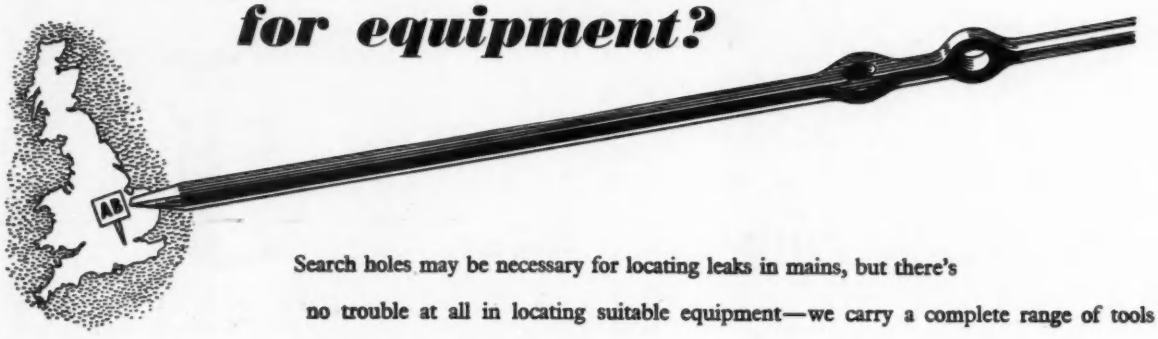

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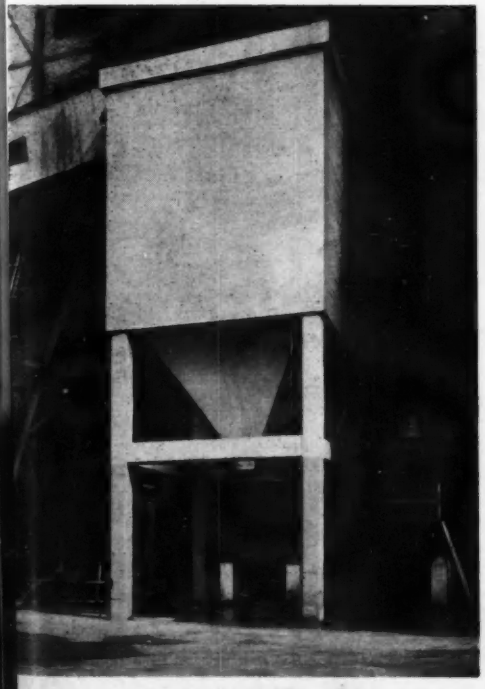

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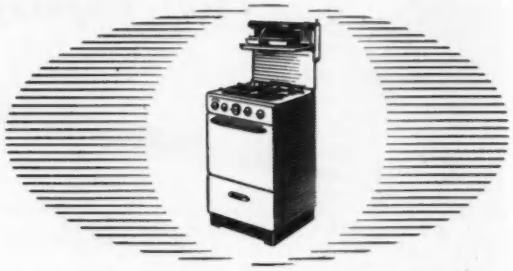

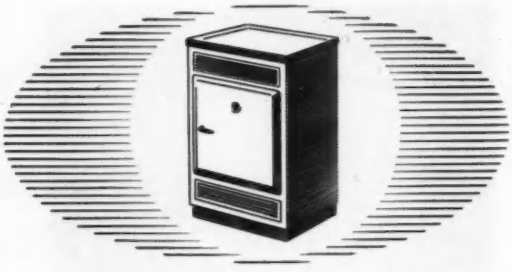

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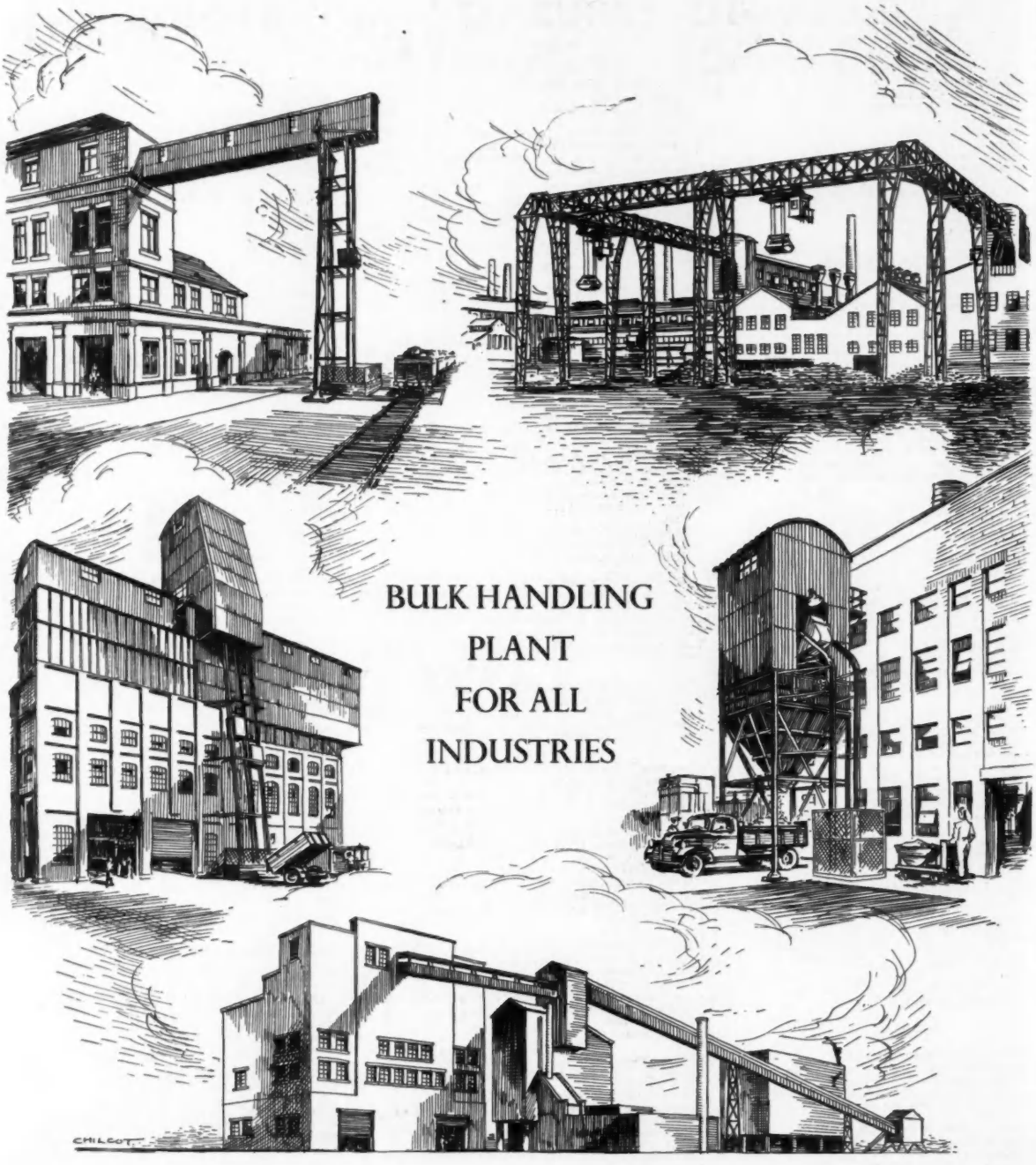

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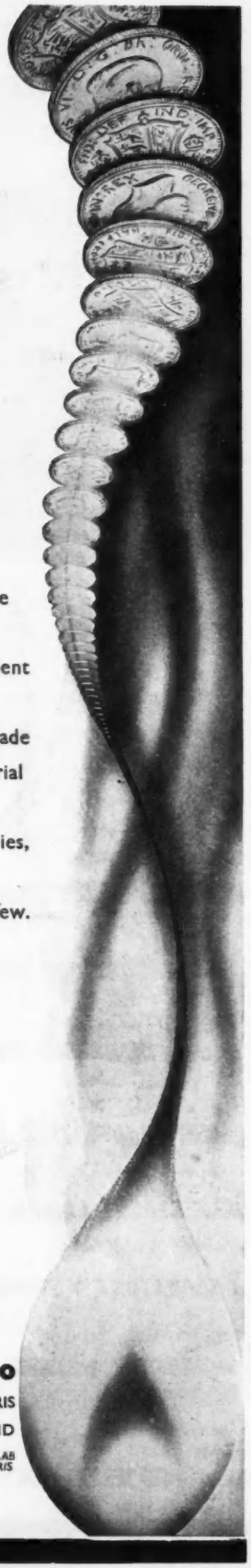

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Gas Journal

105th YEAR OF PUBLICATION
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Telegrams: Gasking, Fleet.

VOL. 274 NO. 4695 May 27, 1953

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GAS JOURNAL
May 27, 1953
Vol. 274 No. 4695

E R

ELIZABETH REGINA

HER MAJESTY QUEEN ELIZABETH II will be crowned at Westminster Abbey on Tuesday next, June 2, and we join in other messages of allegiance and devotion which appear on later pages of this our Coronation Number of the GAS JOURNAL. *Amid changing scenes and circumstances we look to the Crown in high confidence and with a humble sense of duty to inspire us with that sense of steadfastness and purpose which must be the basis of all our endeavours as members of an important public service. Such inspiration has been given by the Crown, so generously, so selflessly, irrespective of changing fortune and grievous wars.*

We know full well how the hearts of millions of the Queen's subjects will rejoice on June 2 and we are certain that nothing of this rejoicing will prove transitory. For us this Coronation Year, with all that it signifies, begins a new era in the resurgence of the initiative, determination, and fortitude which made Britain; the beginning of a new epoch in that tolerant form of civilisation which is so essentially characteristic of the British people.

On many occasions in the past the Royal Family has shown interest in the work of the gas industry. For this we are indeed grateful and feel emboldened to look forward to its continuance. Our pages today recall some of these 'Royal Occasions' which have marked the ceaseless growth of the British gas industry. This issue too glimpses the development of the industry in countries overseas which owe allegiance to the Crown.

May Her Reign be long and glorious

HER MAJESTY QUEEN ELIZABETH II

Photo by Dorothy Wilding

This issue of the *Gas Journal* commemorates a great event in the annals of British history

Coronation issue of the GAS JOURNAL

MAY 27, 1953

We have pleasure in publishing the following messages from presidents and chairmen of the professional organisations of the gas industry and of kindred associations

From **John T. Haynes**
President, Institution of Gas Engineers,

MEMBERS of the Institution of Gas Engineers yield to none in their loyalty to the Crown. Her Majesty Queen Elizabeth II has an added claim to our loyalty and our love, in that as wife and mother she personifies all that the British people hold most dear. Her husband, the Duke of Edinburgh, is an example of the initiative, independence of thought, and kindly consideration for others which are so characteristic of our British way of life.

On the occasion of Her Majesty's Coronation, when the Queen formally undertakes in the sight of God and of all her people the responsibilities of the Monarchy, we tender our loyalty and support, and we pray that she may have a long, happy, and prosperous reign.

From **Lord Baillieu**
President of the Society of British Gas Industries.

ON this great occasion how natural for our thoughts to turn back to the last time a young and gracious Queen ascended the throne of England. Rarely has there been such an age of prosperity and expansion, of buoyant confidence, adventure and success in industry and commerce as the Victorian era. And yet at the time of Victoria's accession in 1837 the gas industry was in its infancy. Gas was then only just coming into its own as a lighting medium and exclusive Grosvenor Square barred its use in street lamps until 1842. Gas cooking was still at the experimental stage in 1850 and the use of gas for space heating had advanced scarcely at all in the 25 years since the first Light and Heat Company was promoted in 1808.

How different is the scene to-day as a second Elizabeth is crowned. The gas industry has made giant strides of progress since those early days. The progressive increase in the size of gas undertakings, rapid scientific and technical development and an adventurous commercial outlook have brought about a complete transformation. The industries which equip and serve the gas undertakings have been close beside their partners in the forward march. Consumers everywhere, industrial, commercial, and domestic, have shared the benefits flowing from a hundred years of continuous progress.

The early struggles of the gas industry were set against a background of expansion and prosperity. Today the task and the setting are alike changed. Today the challenge to the gas industry and all associated with it is to maintain the quality of its service to the community and at the same time to make a still greater effort to improve its efficiency. May the Coronation of our gracious Queen inspire us all to recapture the pioneering and adventurous spirit which animated the builders of this great industry a century ago.

From **R. Neumann,** B.SC., M. INST. GAS E., M. INST. F.
President, Coke Oven Managers' Association.

I WELCOME the opportunity provided by the Editor to address a message of loyalty and goodwill from the Coke Oven Managers' Association to Queen Elizabeth II on the occasion of her Coronation.

Although we are a small association, our influence on the prosperity of the nation is far-reaching. We have in our hands the conduct of a great and thriving fuel processing industry. We have already laid the

foundation for the future by our participation in the education schemes administered by the British Coking Industry Association and in the research programme of the British Coke Research Association.

The outlook during the last 15 years has been very grim but at last there is a feeling of optimism. Let us look upon this as a spur to greater efforts towards national recovery and make Coronation Year a year of celebration and thanksgiving.

I speak for our Association when I affirm that we shall do all in our power to make the Queen's Reign a happy and glorious one.

From **G. E. Foxwell,** D.SC., F. INST. P. M. INST. GAS E., M. I. CHEM. E.,
President, Institute of Fuel.

THE happy event commemorated in this year of our rough island history will bring countless expressions of felicitation and goodwill to the Crown from all parts of the world. Ardent in offering loyal sentiments to Her Majesty are the great engineering and technical bodies operating under her Royal Charter, among whom the Institute of Fuel is proud to be numbered. May God preserve her and grant that her reign be as prosperous in relation to the times in which we live as those of her mighty predecessors, Elizabeth Tudor and Victoria.

In an age when dynasties have fallen before the onslaught of new ideologies and false gods, Britain today is proud to show her allegiance to the Crown and in the sacrament of Coronation to pledge herself anew to the maintenance of those ancient liberties which our ancestors won and of which the Crown is the symbol. Words are not enough. Throughout our centuries of history it is deeds that have counted. An earlier generation that prayed 'God who made thee mighty, make thee mightier yet' acted also on the principle that God helps those who help themselves. The age of Elizabeth Tudor was characterised by the rule of might; the age of Victoria by the spread of industry and civilisation over the world from this island. Yet another order characterises this new world in which we live. The characteristic of our age is the application of science to control and direct the forces of nature to the purposes of man. If our affairs are to prosper, we must advance along the lines of education, invention, discovery, and the application of science. In that, the scientific and technical institutions of our country have a proud part to play. It is not without significance that the Crown, particularly through the Duke of Edinburgh, is leading this movement.

We shall win through! United we stand. Divided we fall. The Crown, happy and glorious, is the link that binds us together.

From **J. R. W. Alexander,** M.A., LL.B.
Executive Chairman, Gas Officers Guild.

TREVELYAN has described the age of great Elizabeth as one which aroused the practical idealism of the English genius to its greatest height. Drake, Sidney, Spenser, Raleigh, and Shakespeare lived among men to whom commerce was an inspiring adventure of life and death, 'as full of peril and adventurous spirit as to o'erwalk a torrent, roaring loud on the unsteadfast footing of a spear.'

They enjoyed the blessings of a reign on which Englishmen have reason to look back as the most fortunate as well as the most wonderful in their history. The three chief elements in the culture of the day—music, the classics and the bible—combined to inspire the 'God-gifted organ-voice of England.'

Those spacious times are associated in our minds with chivalry and patriotism, virtues to which we may hope to return during the Elizabethan era of expansion to which we are now dedicated. But the opportunities are much wider and more responsible, for Queen Elizabeth II is 'Queen of this Realm and of all Her other Realms and Territories, Head of the Commonwealth, Defender of the Faith.'

In declaring our unbounded loyalty to Her Majesty—whose service is perfect freedom—we recall the words of Elizabeth of England: 'Though God has raised me high, yet this I count the glory of my Crown, that I have reigned with your love.' We of the gas industry will for ever be mindful and the faithful guardians of the marks of Royal favour which the Queen and her predecessors have bestowed upon us since attempt was made in 1807 to promote the first gas undertaking, the 'New Patriotic Imperial and National Light and Heat Company.'

The *Gas Journal* has devoted itself to its readers for over a century, faithfully recording—from Barlow to King—the development of the gas industry during the greater part of its outstanding history in the service of the people of nine Sovereigns. Such service began with the provision of light, without which the Industrial Revolution could not have been carried to its conclusion and the social amenities of life secured.

Those one-hundred and fifty years have covered the period from the eclipse of Napoleon to the defeat of Hitler, from the Ministry of Pitt to that of Churchill. It began with a population shifting from rural to industrial areas, 'bowing their heads for bread,' and it ended with the inauguration of the Welfare State. We have passed from *laissez-faire* to nationalisation and from a single to a thousand-and-one uses of gas.

Britain has taken her ideals, her laws, her system of government, her trade and the supply of gas to all parts of the Commonwealth. These are human achievements. In humbly and dutifully saluting Her Majesty the Queen, let us remember those of our company who gave of their time and substance in the common interest. We look ahead with confidence, 'for the cause that lacks assistance, for the wrong that needs resistance, for the future in the distance and the good that we can do.'

From **G. H. Newman**

Organising Officer for Gas Staffs, National and Local Government Officers Association.

ON the joyful occasion of the Coronation, members of the National and Local Government Officers Association employed in the gas industry, speaking also for the 222,000 public service officials belonging to the Association, humbly acclaim Her Majesty, Queen Elizabeth II, pledge their loyal allegiance to her, and offer their assurances of their resolve always to serve the Queen and her subjects with loyalty, integrity, and devotion.

From **Miss K. M. Halpin,** O.B.E.

President, Women's Gas Federation.

ON the occasion of the Coronation of Her Majesty Queen Elizabeth II, the members of the Women's Gas Federation pledge their loyalty to the Crown and their ever-increasing admiration and devotion to their Queen.

Representing housewives of the country on whom falls the great responsibility of maintaining the home as the basis of good citizenship, and believing that this can only be achieved by right spiritual values, we are thankful that we have in our Queen the shining example of one whose whole life is service against the background of a happy and sound home life.

At this historic moment we remember with gratitude the traditions which lie behind us and their value in a changing world. We humbly take up the challenge of our day to see that in our own lives and in the growth of our committees and associations we are ready to preserve those things from the past which are fundamentally good and at the same time to have the vision and imagination to accept the new ideas of today which together will ensure a right pattern for tomorrow.

Our Federation's aims and objects are the same today as they were when we were founded in 1935—to work for the betterment and improvement of home life by the furtherance of the knowledge of homecraft, to study the developments of modern science as they affect the home, and to bring to all a fuller realisation of the housewife's contribution both inside and outside the home.

At the beginning of a new reign full of hope and promise we re-affirm these objects and pledge ourselves to use every endeavour to generate in the home the give and take which comes from happy fellowship and complete confidence in one another—the smooth working and efficient organisation which comes from the successful blending of all our skills, and the realisation that the job of homemaking is one of the most important in the world.

We feel that by striving to carry out these ideals we shall best serve our Queen who is herself the perfect example of the happy home-maker. That God may bless these endeavours and give Her Majesty a long and glorious reign will be our constant prayer.

From **William E. Webb**

Chairman, British Gas Staffs Association.

HER Majesty Queen Elizabeth II, on her accession to the Throne, in a few simple words will dedicate her life to the service of her people. This high ideal of Her Majesty's is already enshrined in the hearts and minds of us all.

Selfless service often entails sacrifice, and in the gas industry, where service to the public has always been an ideal, the Queen's example has acted as an inspiration and a spur to further endeavour.

On the occasion of Her Majesty's Coronation, British Gas Staffs proudly join with the peoples of the British Commonwealth of Nations in acclaiming the Queen and in tendering their heartfelt loyal devotion and humble duty.

That Her Majesty's reign will be both long and glorious is the earnest prayer of British Gas Staffs.

From **Robert Cowie**

President, Scottish Association of Gas Managers.

HER Gracious Majesty Queen Elizabeth II holds a special place in the affections of her Scottish subjects as did her royal father before her. As gas engineers we are particularly happy that the Queen should honour our profession by becoming a patron of the Institution of Gas Engineers, and that her husband, the Duke of Edinburgh, should do us the honour of accepting Honorary Membership of the same Institution. May her reign be long and glorious, peaceful and prosperous, may she be blessed in her private and public life, may she and her family enjoy health and happiness. Long Live the Queen.

From **R. Norgate**

President, Cumberland and Westmorland Gas Managers Association.

I AM deeply honoured by being allowed to write a message on behalf of the Cumberland and Westmorland Gas Managers Association in connection with the Coronation of Her Majesty Queen Elizabeth II.

We who live in this somewhat sparsely populated and most northerly part of the West of England are considerably more isolated than many of our countrymen, most of whom are able to visit the Capital and return home the same day. This isolation makes it almost impossible for us to witness any of the ceremonies in which Her Majesty frequently takes part, but, although we are separated by hundreds of miles, this distance never diminishes our loyalty to the Sovereign.

We, like many of the Queen's subjects throughout the world, will never see her, yet our allegiance is paramount. Nature has implanted in us a sacred and undissoluble attachment to the country of our birth and that attachment is clearly demonstrated by the affection we have for our Sovereign.

On June 2 we shall toast Her Majesty in the traditional British way.

From **Stanley Robinson**

President, British Road Tar Association.

IT gives me great pleasure to accede to the request of the Editor of the *Gas Journal* to convey a message to commemorate the Coronation of Her Majesty.

In her first Christmas Broadcast the Queen, whose youthful charm and courage has won the hearts of all her subjects, stated that now was the time for youth and adventure, not only for those young in years but also for those who may be old in years but young in spirit. This message gave me the greatest encouragement, as I am sure it did to all those who are, like myself, 'not so young.' The Queen's message was not, I am sure, confined to persons only but applied to groups and associations of persons as well.

The British Road Tar Association is a case in point. It is old in years but extremely young in spirit. It strives untiringly with youthful vigour to achieve its object, which, very simply put, is to see that nothing but the best tar is put on the roads.

We are proud of the fact that in the B.R.T.A. the representatives of the nationalised gas and coal industries sit together with those from private enterprise tar distilling companies in close and fruitful collaboration, their aim being to make the best possible use of the by-product tar in the numerous directions in which it is employed.

From **F. A. Rhead, B.SC.**

Chairman, Eastern Section, Institution of Gas Engineers.

WE are now standing at the beginning of a new era, and fervently trust that it will be even more glorious than that of Elizabeth I.

Queen Elizabeth II has graciously bestowed her Royal patronage on the Institution, and the Duke of Edinburgh has also expressed his interest by becoming an Honorary Member. In this most gracious support, we of the Eastern Section take great pride.

Pride alone is not sufficient, and therefore we as a Section are determined to play our part in adding further to the achievements of the gas industry, thus making our contribution to the glories the Commonwealth will achieve under Her Majesty's guidance.

From **C. R. M. Croft, B.A., A.M.I.C.E.**

Chairman, London and Southern Section, Institution of Gas Engineers.

I AM sure the Members of the London and Southern Section of The Institution of Gas Engineers would like me to express anew their loyal greetings to Her Majesty the Queen at this time of Her Coronation.

The Gas Industry has almost since its inception been privileged to serve the Royal Household and we are proud that we continue to do so.

It may be of interest to readers that it was due to the request of the Prince Regent that a scheme be prepared "for the improved lighting of the Royal Pavilion Gardens" that the manufacture and supply of gas at Brighton owes its early origin, this wish being inspired by the then recent installation of gas lighting in Pall Mall.

The Patronage of Her Majesty and the acceptance of Honorary Life Membership by His Royal Highness the Duke of Edinburgh will be a constant inspiration to members of the Institution of Gas Engineers, and its members in the London and Southern Section.

We wish Her Majesty and His Royal Highness happiness and God's Blessing in the task that lies ahead.

From **A. K. Collinge**

Chairman, Manchester and District Section, Institution of Gas Engineers.

ON the occasion of the Coronation of Her Gracious Majesty, Queen Elizabeth II, I am grateful for the opportunity of expressing the loyalty and respectful allegiance of the Manchester and District Section of the Institution of Gas Engineers. The close interest in the gas industry shown by the late King was a source of great encouragement and this has been furthered by the acceptance of life membership of the Institution by the Duke of Edinburgh and the announcement that the Queen has been graciously pleased to grant her Royal Patronage. The Manchester and District Section share in the honour conferred upon Lancashire by Her Majesty's assumption of the title 'Duke of Lancaster,' which perpetuates the close connection of the Royal Family with the County Palatine.

Our new Queen, on her 21st birthday, testified to her aspirations in these words: 'I declare before you all that my whole life, whether it be long or short, shall be devoted to your service and the service of the great Imperial family to which we all belong'. The service which Her Majesty has already rendered has been an inspiration to all her loyal subjects and by her shining example she has fully maintained those high traditions associated with the Crown which unite the British people throughout the world.

The burdens of state which the Queen was called upon to carry so suddenly will be lightened by the unswerving loyalty and affection of all her peoples; and may this focusing of allegiance be the means of awakening something of the spirit of high endeavour which characterised the first Elizabethan Age.

From **G. W. Perks**

Chairman, North of England Section, Institution of Gas Engineers.

THE time of the accession of a King or Queen is often one of mixed feelings—regret at the passing of one with the joyful acclamation of the other.

This was particularly the case with our present Queen Elizabeth II. The untimely death of her father, King George VI, after a comparatively short reign, marked as it was by his undoubted devotion to duty, was an event which caused genuine sorrow throughout the country. I think, too, there was a feeling of regret that Queen Elizabeth should be called upon to assume the heavy responsiblities associated with the Crown at an age when the average young matron is able to enjoy in full the pleasures and interests of family life.

Despite the fact that our Sovereign deservedly enjoys the respect and affection of all classes of her subjects to a degree probably unknown in any other country, I am afraid we accept all this as a matter of course without

ROBERT COWIE S. ROBINSON C. R. M. CROFT R. NORGATE

A. K. COLLINGE W. MACNAUGHTON H. MAYCOCK J. W. DENTON

properly appreciating the enormous amount of work and strain involved.

We shall soon be celebrating Her Majesty's Coronation with its attendant rejoicings, but let us not forget that we, her loyal subjects, also have our responsibilities. The country is passing through difficult times and may I therefore suggest that, along with our very sincere wishes for Her Majesty's long life and happiness, we all resolve, in whatever capacity we serve, to make that extra effort in our every-day life so necessary for improvement of these conditions, and thereby convert our good wishes into something really tangible.

From **H. Maycock,** M.I. MECH. E.
Chairman, Wales and Monmouthshire Section, Institution of Gas Engineers.

THIS year, 1953, is one that will stand out in history with peculiar clarity and brightness, and particularly the month of June, on the second day of which our young Queen Elizabeth II will be crowned in Westminster Abbey with all the splendour and solemnity befitting this sacred and impressive ceremony of coronation.

This Coronation is not merely a pageant at Westminster Abbey and a procession through the streets of London. In all ages the crowning of a King or Queen has been regarded as one of the most sacred of religious rites. It is a compact between the Sovereign and the people, solemnly engaged in before Almighty God.

The source of a nation's strength is its industries and professions, each one of which subscribes to its life and development, none more so perhaps than the gas industry with which most of those who read these lines have the honour to be associated in its efforts to promote the prosperity of the country.

I greatly appreciate the opportunity afforded through the columns of this Coronation Number of the *Gas Journal* to express on behalf of the members of the Wales and Monmouthshire District Section of the Institution of Gas Engineers a tribute of homage and affection to our Sovereign, Queen Elizabeth II, who has already given generous evidence of her unselfish devotion to duty and won the affection of her people by her charming disposition.

From **W. Macnaughton**
Chairman, Midland Section, Institution of Gas Engineers.

BRITAIN under her Constitutional Monarchy for generations has taken a leading part in world affairs, and today we are proud of the accomplishments of the past and we look forward with confidence to the achievements of the future, in which we have no doubt that the gas industry will take a prominent part.

We are fortunate in having as Ruler a young Queen who has already shown to the world her illustrious qualities and who has gained the deep affection of us all.

As a people there is no reason to think other than that the new Elizabethan Age will be equally as great as, or greater than, that of the past, and we say with one voice 'God Save the Queen.'

From **A. H. Dyer,** M. INST. GAS E.
Chairman, British Junior Gas Associations Joint Council.

THE British Junior Gas Associations Joint Council extends to Her Majesty Quen Elizabeth II its loyal and affectionate greetings on the occasion of her Coronation. The Council does sincerely trust that her reign will inaugurate a long period of peace and prosperity throughout her Empire and the rest of the world, and that she will long be spared, with her Consort the Duke of Edinburgh, to rule the destiny of this nation.

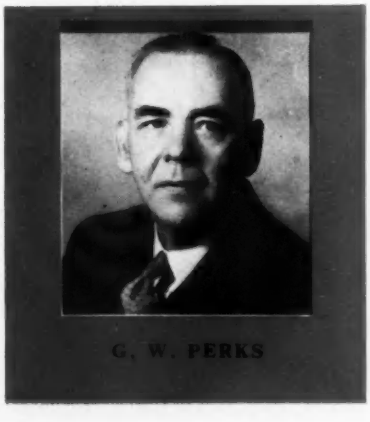
The gas industry has for over a century been of great assistance in the welfare of her subjects and has played its part in the development of commercial and industrial enterprises. The Joint Council assures Her Majesty that it will always be its endeavour to uphold the traditions of the past and will ever be ready to make its contribution to the life of the nation.

From **J. W. Denton,** G.M., M.I. MECH. E
Chairman, South Western Section, Institution of Gas Engineers.

AS Chairman of the South Western Section of The Institution of Gas Engineers, I wish to express the deep loyalty of all our members to the Crown and to wish to our young and gracious Queen every blessing to enable her to bear the burden of the heavy responsibilities placed upon her at her Coronation.

Very rightly we are proud of the patronage recently bestowed on our Institution, and this further makes us aware of the responsibility we hold in the service to Her Majesty's subjects. Our Queen, like King George VI and the Queen Mother, builds her life around the family, and it is our duty to support this example by devoting all our technical abilities and energies to improve conditions by our service in every home.

The Institution of Gas Engineers has been established many years, but as we have grown our methods of production and distribution have increased in efficiency. We must, however, draw from our young Queen an inspiration of enterprise and pioneering spirit. We must refresh ourselves by the optimism of all her youthful hopes and ambitions.



G. W. PERKS

ROYAL

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2

1. JULY 10TH 1926 ***King George and Queen Mary*** - Beckton and East Ham
2. NOVEMBER 1950 ***Duke of Gloucester*** - East Greenwich
3. MAY 3RD 1932 ***Prince of Wales*** - Beckton
4. JULY 1951 ***H.M. the Queen*** - Festival Fair
5. NOVEMBER 4TH 1948 ***Duchess of Kent*** - Beckton
6. OCTOBER 19TH 1926 ***Duchess of York*** - Kensington Showrooms
7. NOVEMBER 1952 ***Queen Mother*** - International Kitchen

OCCASIONS

3

4

5

6

7

GAS PLANTS OF THE QUEEN'S DOMINIONS

DEVELOPMENT OF THE GAS INDUSTRY IN COUNTRIES OVERSEAS WHICH OWE ALLEGIANCE TO THE CROWN

SOUTH AFRICA

CONTACTS between members of the Royal Family and the Union of South Africa during the past 30 years have been intimate and frequent, although a long break occurred as a result of the Second World War. In 1925 the Prince of Wales (now Duke of Windsor) visited South Africa. On June 22 of that year the Prince arrived at Johannesburg station, and he received a welcome almost stunning in its intensity. His greeting from the enormous crowd, estimated at from 300,000 to 350,000 people, was overwhelming. The utmost enthusiasm and loyalty were aroused. It was a great and memorable visit.

Johannesburg was honoured by a visit from Prince George which lasted from March 10 to 14, 1934, and the City was indeed grateful for the opportunity of again receiving a visit from a member of the Royal House. Following his arrival, he received a thunderous welcome along the entire route from the station to the City Hall and it appeared as though the whole of the Witwatersrand had turned out to meet His Royal Highness.

Their Majesties King George VI and Queen Elizabeth and the Princesses Elizabeth and Margaret travelled to South Africa in H.M.S. 'Vanguard,' arriving at Cape Town on February 15, 1947. Their tour throughout South Africa was a triumphal progress during which every section of the community, irrespective of colour, class, or creed, vied one with the other to see the Royal Family and to show its loyalty to their King and Queen and to extend to them that hospitality for which South Africans are famed. From March 29 until April 7 the Royal Family resided in Pretoria and during that period visited Johannesburg and the Reef Towns. The endurance of the Royal Family was strained to breaking point by the heavy programme which had been arranged for their visit, but they cheerfully fulfilled every engagement and always had a ready smile and a word of encouragement for the ex-servicemen and women, the children, the aged, and the sick whom they met.

Her Royal Highness the Princess Elizabeth, now about to be crowned Queen Elizabeth II, attained her majority while in South Africa and her coming-of-age was celebrated in Cape Town, to the great delight of the citizens there, whose hearts she had won.

During March, 1947, disastrous floods occurred in Great Britain, which, together with the severe weather, wrought damage to a value of more than one hundred million pounds. An appeal was launched in the City on March 25, that being the birthday of the Princess. Over £140,000 was subscribed and on April 21 the Mayor of Johannesburg travelled by air the 900 miles to Cape Town, to present to the Princess an illuminated address conveying loyal and affectionate greetings on the occasion of her 21st birthday and to ask her to accept, on behalf of the

Aerial view of the Johannesburg Gasworks taken from the North East.

Main entrance to the Johannesburg Gasworks featuring Mr. Therm.

The Royal Family on the occasion of their visit to Johannesburg on April 1, 1947. The Mayor of Johannesburg (Councillor J. Gray, M.P.C.), King George VI and Queen Elizabeth and the Princesses Elizabeth and Margaret on the dais in front of the City Hall.

people of Britain, over £140,000 raised as a donation from Johannesburg.

Of the 1947 Royal visit it can be said that there never were, nor ever will be, more popular and welcome visitors to Sunny South Africa, and it is the earnest desire of everyone that Queen Elizabeth II and His Royal Highness the Duke of Edinburgh will visit the Union in the very near future.

The Johannesburg Gas Undertaking

And now a few words about the Johannesburg gas undertaking. The Johannesburg gasworks is unique in that it is one of the highest-located works in the world, being situated approximately 6,000 ft. above sea level and being 400 miles inland from the nearest coastline. The Johannesburg municipal area covers 100 square miles and is located in a section of the Transvaal Province known as the Witwatersrand. In this area are found some of the greatest gold mines in the world which produce the major portion of the world's supply of this precious metal.

A large number of the City's suburbs are located on hilly terrain so that this factor and the sparseness of Johannesburg's white population in the suburban areas give rise to gas distribution difficulties not generally encountered in other countries which are comparatively flat and densely populated.

Following the discovery of gold on the Witwatersrand in the year 1885, a far-seeing group of individuals formed a private company in 1886 and obtained a concession from the Government at that time to light by gas the streets of the town which then consisted generally of tin shanties in contrast to the massive iron and concrete structures evident today. This company, called the Johannesburg Lighting Company, arranged to have a complete gasworks designed and made in England. The plant was shipped to East London, the nearest port at that time to Johannesburg, and from there it had to be transported a distance of about 700 miles over unmade roads by means of ox waggons, as no railways existed. It is not on record how long the sea journey took or for that matter the long trek inland. However, some of the difficulties encountered in this task are evident from the fact that it was six years after obtaining the concession before gas was manufactured in Johannesburg. The private company was, however, short-lived. It was taken over by the Local Authority in 1895 and has remained so owned and administered ever since.

In dealing with the growth of Johannesburg from a shanty town to one of the most modern cities in the world, it is interesting to record that the white population in the whole of the Transvaal, as distinct from Johannesburg, numbered about 25,000 in 1854, and had increased to 40,000 by 1875. The estimated population at June 30, 1952, in Johannesburg is as follows: Europeans, 346,600; Natives, 392,600; Eurafricans, 31,100; Asiatics, 20,700—total, 791,000.

In 1927 the Council erected a new gasworks of modern design in the suburb of Cottesloe some 2½ miles away from the original works and closed down the old and diminutive works established in 1892. This works, added to from time to time, has developed into one of the largest individual municipal works in the world. The price of gas is still the cheapest south of the Equator and one of the lowest anywhere, being 5s. 6d. per 1,000 cu. ft. with a calorific value of 468 B.Th.U. The annual output of gas has increased from 11 mill. cu. ft. in 1892 to 1,886 mill. in 1952.

Reticulation is on the arterial system, the mains of various sizes from 24 in. to 3 in. diameter being about 500 miles in length. The present number of main consumers is approximately 16,000, of which about 30% are industrial. Unlike the English practice, the Johannesburg undertaking has no prepayment meters and does not deal with individual consumers in blocks of flats, the gas being

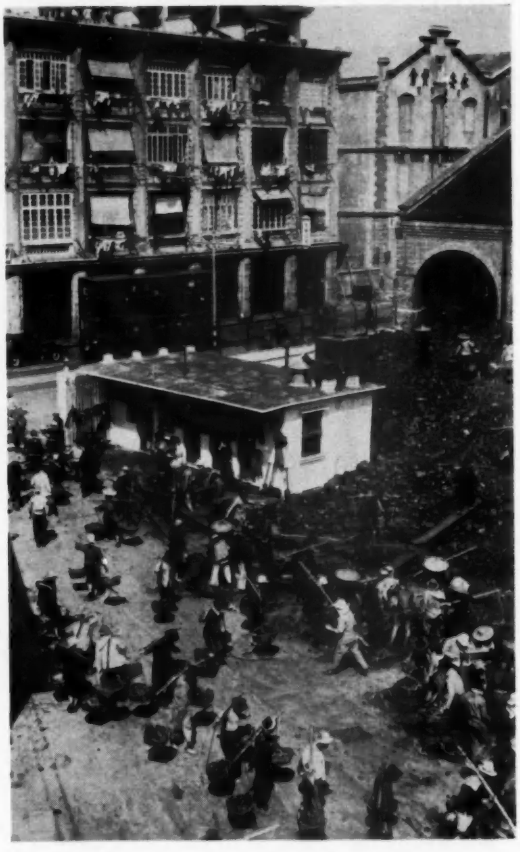
metered in bulk to the building. From the outlet of the Council's main meter it is the owner's responsibility to supply and sub-meter the gas to all his tenants. In some instances there are as many as 100 privately-owned sub-meters in a single block.

The Johannesburg Gas Department does not enter into competition with commercial firms as the sale and installation of appliances as well as their maintenance is in the hands of enterprising merchants who maintain their own showrooms and staffs. The Department does materially assist by maintaining a small showroom at the gasworks where merchants are at liberty to exhibit appliances and also has a qualified cookery demonstrator to assist when required.

The carcassing of new buildings and the maintenance of old ones is left to private enterprise. The consuming public is protected in that the Gas Department is authorised by a Provincial Ordinance to set up an Examining Board to issue gas fitting licences to qualified artisans after a satisfactory examination. When necessary gas fitters may obtain tuition at the local Technical College. An inspectorate staff is maintained by the Gas Department to keep check on all installations so that no municipal main meter is fitted or the gas supply turned on until the installation has been inspected and passed.

A satisfactory market has been built up over the years for by-products, the demand now outstripping the supply. Besides supplying the domestic market in Johannesburg, coke, when available, is sent by rail to customers all over South Africa, in some cases to towns nearly 1,000 miles away. Enquiries for the exportation of soft coke have been received but cannot be entertained.

Gas is used in thousands of domestic premises in Johannesburg, 200 factories producing electric globes, foodstuffs, cutlery, clothing, etc., 30 nursing homes and hospitals, 55 hotels and restaurants, 490 blocks of flats, and 82 schools.



A typical scene at the coal depot adjoining the Hong Kong Gasworks, with what looks very much like a former London tram in the background.

HONG KONG

THE Hong Kong & China Gas Company operates solely in the British Crown Colony of Hong Kong. The Colony consists of the Island of Hong Kong, first occupied by the British in January, 1841, and formally ceded by China in 1842, Kowloon on the mainland, acquired by the Peking Convention of 1860, and other territory held for 99 years under a lease signed in 1898. The areas actually served by the company are the capital city of Victoria on the island and Kowloon on the mainland. No mains extend into China proper or, at present, even into the leased territory.

The history of the company can be said to have commenced in May, 1861, when letters were exchanged between the Governor of Hong Kong and Mr. William Glen, leading to the concession to that gentleman of the right to supply gas in the city of Victoria. The company was formed in this country in 1862 with the main object of supplying gas in Hong Kong and other places in China and, by agreement, it took over the concession as regards Victoria. A site was obtained for a gasworks on the waterside and although this first site is still used by the company it is no longer by the waterside, a considerable amount of reclamation having taken place, and where the company once landed its coal is now a built up area and access to the waterfront is 200-300 yards away. Gas manufacturing plant for a complete gasworks with mains and fittings was shipped from Great Britain and erected under the supervision of a manager appointed by the company. It was on December 3, 1864, that Hong Kong was lit by gas for the first time and the company's records show that there were at that date 15 miles of mains and 500 public lamps.

Hong Kong was described as a barren and desolate island when first taken over by Britain in 1841, but rapidly developed into a modern city. On the mainland Kowloon was less quick in its growth but expansion was taking place and the company had the foresight to purchase land on which to erect a second gasworks and this project was put in hand in 1891. The plant was completed by November, 1892, and gas has been supplied in Kowloon from that date.

Both places have since grown considerably and the company has extended its service as circumstances required. A storage station at Wanchai was the first extension; the latest planned development is the provision of an entirely new works to replace the now inadequate facilities at Kowloon. A site was secured before the 1939/46 war at Ma Tau Kok which involved the erection of a sea wall and the reclamation of land behind it. This was done and as a first step a gasholder was erected and water and tar tanks built. Further steps were, of course, held up by the war and the occupation of Hong Kong by the Japanese. After the recovery of its property the company found itself in a precarious position but careful direction, efficient management, and loyal service have brought the company through and the new works is to be erected as speedily as the orders for plant can be executed.

During its history, the Hong Kong & China Gas Company has had to face many difficulties and even dangers. Great fires have wrought much damage to property in the city of Victoria, fierce storms with torrential rain have caused devastation and typhoons have struck the colony with extreme violence. The gasholders are of special thickness and all frame guided as a precaution against wind of unusual force and special steps are taken to protect the company's plant when a typhoon is predicted. The biggest blow to the company, however, was the seizure of Hong Kong by the Japanese in December, 1941. After a month of actual warfare, with bombing and shelling

Kong Kong surrendered to the Japanese on December 25. The company's European officials and Chinese workmen were forced to carry on the manufacture and supply of gas, and three Japanese civil gas engineers arrived about a week later and took control. Repeated requests were made by the company's officials to be allowed to join the rest of the British community in the internment camp but these were flatly refused and the officials were told to continue their duties both at the works and on the district; this they had to do for many months but eventually they were interned. When the war in the East ended in August, 1945, the company's staff immediately resumed control of the works. They found both works intact as regards war damage to the manufacturing plant, but this was in a bad state of repair at Hong Kong and only in fair condition at Kowloon, the former plant having been shut down for over a year and the latter for three months. The holders had not escaped damage but had been repaired, albeit in a far from satisfactory manner, by the Japanese. The offices and buildings were filthy, there was no stock of coal, coke, tar or fuel oil, although general stocks were not badly depleted. The mains system had suffered considerably. Frequently water mains alongside gas mains had been broken simultaneously by shelling, and water with large quantities of silt had found its way into the gas mains. The Japanese had removed over 2,000 cast iron lamp posts which in most cases were simply snapped off at the base, no attempt being made to cap off the service pipes. All lamps had disappeared and many meters and appliances on the district. While the Japanese ran the supply they kept their own records and the company's books and records were recovered mostly intact, but, of course, out of date.

The European staff, five in number, were all suffering from malnutrition and bad treatment and about 60% of the Chinese staff had died mostly from starvation. Those that were available were in poor condition. Two of the staff were immediately repatriated; the others applied for and were reluctantly granted delayed repatriation until help was available from this country. Strenuous efforts were made to put things in order and to obtain coal and stores. When coal eventually arrived from India at end of December, 1945, the works were started up, first Kowloon where the supply commenced on January 3 and then Hong Kong on January 25, 1946.

The company had suffered considerable financial loss. The value of coal and residual stocks lost, damage to plant and mains, appliances, meters and lamps lost, irrecoverable debts, etc., made up a war loss claim of almost $2,000,000 (say £125,000). Business in the Colony, however, recovered so rapidly that Hong Kong was soon in a flourishing state and an official view was taken that those companies which suffered war losses were in a position to rehabilitate themselves under these conditions and the claims were shelved.

The Hong Kong & China Gas Company has made an exceedingly good recovery from the war and now feels itself in a position to finance the new works. Gas sales have steadily risen and the year 1952 was a record one for sales, despite some depression in the general trade of the Colony. The sale of residual products is much restricted by the virtual prohibition of exports to China.

There are nearly 7,000 consumers, of whom 60% are Chinese and 32% European nationality. The latter have installed modern gas cookers and water heaters but there is virtually no call for gas fires. The Chinese consumers often have a gas 'Chatty,' an appliance designed and made in Hong Kong for cooking oriental dishes. The company's records show that over 70 years ago the Military Cantonments were supplied with gas and today the Naval and Military authorities are among its best customers. Gas is used extensively in practically all military kitchens and canteens and also in residential flats for officers and other ranks for cooking, hot water and laundry purposes.

The military kitchens are very modern and the English kitchens have the latest ranges, pastry ovens, bain maries, hot closets, fish fryers, etc. The Chinese kitchens use different equipment, designed and built by the company's local staff. A Chinese range consists mainly of large triple concentric burners fitted in a fire brick range with a traditional rice and sung kongs. The Ghurka Regiment required another type of range for cooking Indian food and the appliance designed for this has been a great success. The Ghurkas, accustomed to solid fuel ranges, call it the 'Magic Air Cooker.'

At present the coal used is imported from India but in pre-war years much had come from Japan and other sources have been England, Australia, and China. Gasworks plant, appliances, and general supplies have practically always been shipped from this country or the Continent.

The supervisory staff now consists of seven Europeans. The chief clerks, office staff, showroom staff, foremen and workmen are Chinese. Modern machines are used in the offices but a visitor new to the Far East would probably be surprised to see Chinese clerks using the age-old Abacus, or bead frame, for calculations. Similarly on the works, there is much carrying done in baskets instead of wheelbarrows. Despite these apparently primitive methods, both the works and offices are run efficiently.

Coal handling at Hong Kong gasworks.

NEW ZEALAND

NEW ZEALAND, by reason of its elongated shape, possesses a very lengthy coastline in proportion to its area, and, with the exception of the North Auckland peninsula, the length of the land mass lies along a South Westerly-North Easterly axis and is thus parallel to the direction of its mountain chains. The mountainous nature of New Zealand is one of its most striking physical characteristics. In the North Island approximately one-tenth of the total area is occupied by higher mountains, among which are included three active volcanoes.

The South Island is much more mountainous than the North, but shows fewer manifestations of recent volcanic activity. Along almost the entire length of the South Island runs the massive chain of the Southern Alps, which attains its greatest height of 12,349 ft. at Mount Cook, while a further 17 peaks exceed 10,000 ft.

New Zealand lies wholly in the temperate zone, and furthermore, lies wholly within the zone of prevailing westerly winds at all seasons of the year. Due to its remote

position, lying as it does in the South Pacific Ocean, some 1,200 miles eastward of Australia and 6,000 miles westward of South America, and with the Antarctic Continent some 1,600 miles to the South, the climate is predominantly marine in character and yet is modified considerably by the effect of the high mountain ranges and the prevailing westerly winds.

There is, for example, a great variation in rainfall from one district to another, with precipitation as high as 200 in. per annum at Arthur's Pass in the Southern Alps, where a large railway junction is located, and through which nearly all the South Island coal consignments are routed, whereas in Christchurch, only 100 miles distant, the annual rainfall averages 25 in. In the North Island similar variations exist.

The temperate climate, the high mountain chains, the extensive coastline, the high precipitation, the swift flowing unnavigable rivers, the large tracts of fertile alluvial land on the coastal plains, all contribute to the environment and pattern of life in New Zealand, and it is only with this background adequately stated that a picture of New Zealand's industrial life can be effectively portrayed.

The gas industry was originally a portion of the virile activity of the early settlers. This is well exemplified in Christchurch, which was pioneered in 1850 under the guidance of Edward Gibbon Wakefield, who endeavoured to reproduce an English environment by transplanting a cross-section of English population comprising representatives of both the artisan and capitalistic class into the new Colony. Within 12 years of the initial landing in Lyttelton, the City of Christchurch had been established and a public meeting had been called to promote the establishment of a gasworks, and within a further two years gas was being manufactured and distributed to the new town.

This progressive spirit was common throughout the length of the Dominion. Auckland, Wellington, and Dunedin all established gasworks in the 1860's, and almost every borough, inspired with the belief that its own immediate area was destined to see rapid and continuous growth, developed its town on progressive lines and included a gas manufacturing plant for the convenience of its citizens.

There have been in all, 46 separate gas undertakings in New Zealand. This will perhaps not appear to be a very great development in English eyes, but, when contrasted against population density and land area, the extent of the development is considerable.

The population of New Zealand approximated to 1.9 mill. people in 1950, which is one-twentyfifth of that of England and Wales, whereas the land area of the North and South Island approximates to 102,374 square miles and the density of overall population approximates to 16 people per square mile.

New Zealand, as was originally intended, has developed as primary producing country—it lives in the main on the grass carrying propensity of its land, which is so favourably endowed by its climatic and geographic features. In consequence, urban development has in the main been restricted to entrepôt centres where its primary produce is marshalled for export and where reciprocal items of trade are received from overseas for distribution to the rural hinterland. The effect of this development in population density has resulted in there being only four major centres of urban development in New Zealand; these being Auckland, Christchurch, Wellington, and Dunedin.

When consideration is taken of the fact that often hundreds of miles of farm land lie between one population centre and another, the prospect of integration is remote on an extensive scale; in consequence the majority of the gas undertakings which were pioneered with such enthusiasm in the early days of the development of New Zealand have failed to meet the anticipations of their founders. Population density in many of these areas has failed to expand, and in several cases where towns were established in the gold mining centres, populations have diminished, leaving the gas undertakings as a monument to that which might have been, had the grim tide of economic circumstance not changed its course.

Gas undertakings in the four main centres of population density and the 10 supplementary centres, while more fortunate than the remaining 32, have in no way enjoyed a monopoly, and while their development has been steady they have had to fight for the business they enjoy today.

The environment and geographic background of the New Zealand scene has had a markedly restrictive effect upon the development of the Dominion's gas industry, for in a country of high rainfall and high mountainous area with large snow-fed lakes and fast flowing ravined-walled rivers, there is an easily tapped source of hydro-electricity, and over the past 30 years generating station after generating station has been brought into production.

Competition has been particularly keen, for while the electricity has been generated in Government-owned plants it has been retailed by municipalities and *ad hoc* distribution bodies on a non-profit making non-tax paying basis, and tariffs have been so constructed that the more electricity a distributive body could sell, the cheaper could it purchase its load from the Government hydro-electricity department.

Co-lateral with this development, the Government of the day adopted the policy of compulsory acquisition of all the mineral rights and in due course secured the ownership of all coal mines within the Dominion. The paradoxical position then developed of Government generated elec-

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Air view of Christchurch Gasworks, New Zealand, taken from the east.

Photo by Baron]

H.R.H. THE DUKE OF EDINBURGH

Honorary Life Member, Institution of Gas Engineers

tricity being sold through *ad hoc* distributive agencies on cut-throat monopolistic lines by which lighting units and power units were marketed as high as 4d. or 6d. per unit with domestic hot water units being sold at 0.25d. and cooking units at 0.48d. per unit in urban areas where gas was available in competition, and with the same Government demanding that its coal mines and railways should operate at a profit, and thereupon increasing coal prices and freight rates overnight by figures which doubled the cost of coal landed on a gasworks. These events have occurred in New Zealand during the currency of the present Government.

As a result of this sudden impost of extra cost gas prices were advanced throughout the Dominion. The effect, of course, was immediate—diminishing returns resulted, with an increase in demand for competitive fuels, mainly electricity. Unfortunately for the public the hydro-electricity department had over the years concentrated more on selling the marginal unit than on construction of vital headworks, so widespread rationing, which had been prevalent for some years, became increasingly rigorous, while many of the smaller gas undertakings, already in a marginal position, advised the Government that with decreased outputs and increased costs they would regrettably have to withdraw their supply and cease to operate.

In the larger centres, however, gas was still in a strong position. Profits were diminished, but a well-balanced load enabled them to hold the fort, in the short term at least, for a position of this nature was obviously only of short-term duration.

In 1951 the Government was forced, by virtue of a probable breakdown in the fuel and power services of the Dominion, to set up a committee to investigate the position that had arisen. A panel of civil servants under the chairmanship of a public accountant, who later received a public service appointment, toured the Dominion and harvested a dossier of fact and fiction which it ultimately codified into a report which was never published. The shortage of electricity, however, and the necessity to burn high-priced coals in obsolete steam power stations to boost the hydro-electricity output, produced a set of circumstances which could not permit of a cessation of gas production even in the smallest and most marginal of centres. Thus, with great magnanimity, a harassed Government on the eve of a snap election, when the cost of living was being assailed on the hustings, granted a subsidy to every domestic gas consumer of 2s. per 1,000 cu.ft. This subsidy was primarily limited to a period of two years or until the price of electricity should be rationalised. On February 25, 1953, our newspapers advised us that all electrical tariffs had been revised and that domestic power would rise by 48% and industrial power by 60% forthwith.

So another era of competition commences—unsubsidised gas versus allegedly unsubsidised electricity. The battle is still not won, but a period of uneasy peace might be in the offing.

The Gasworks at Jersey.

GUERNSEY

THE original Guernsey Gas Light Co., Ltd., was formed in 1830, so we are now in our 123rd year of service to the people of the Island.

It might be advisable to mention that the Island Government is autonomous. The Bailiff (Head of the States of Guernsey, our Island Parliament) is elected by the Home Office under the guidance of Her Majesty's Lieutenant Governor, at present Lieut.-General Sir Philip Neame, V.C., K.B.E., C.B., D.S.O.).

We are the only public utility undertaking not owned by the States and we do not operate under any Act of the States (*Projet de Loi*) or Ordinance. The only statement in the Royal Court records is to the effect that on January 5, 1830, Mr. T. Edge, of Westminster Gas Light Company, approached the Royal Court for permission to erect a gasworks in Guernsey and that 'permission was granted on condition that should it afterwards be proved to be a nuisance and detrimental to property, the company should indemnify the proprietors or wholly cease from manufacturing gas in Guernsey.'

Actually the supply has continued uninterruptedly (except for a few months at the end of the German occupation of the Island) and the progress has been most marked. In 1950 sales of gas to 9,864 consumers were over 338 mill. cu. ft. Despite the competition of States-owned electricity we continue to progress.

We supply gas for cooking and heating at Government House and for cooking, central heating, and water heating at the residence of the Bailiff (Sir Ambrose Sherwill, C.B.E., M.C.), while nearly all the public buildings, churches, etc., are heated by gas.

A former Jurat of the Royal Court (the late William de P. Crousaz, O.B.E.) was Chairman of the company from 1908 to 1938, and he was succeeded by the late Quertier Le Pelley, O.B.E., 1938 to 1952.

Guernsey has had many Royal visits since the liberation of the Island. In June, 1945, the late King George VI and Queen Elizabeth, the Queen Mother, came to greet the Island people and to commend our fortitude during the occupation. In June, 1948, we had a visit from the Duchess of Kent; in June, 1949, from Queen Elizabeth II (as Princess Elizabeth) and the Duke of Edinburgh; in July, 1950, from Countess Mountbatten of Burma; in July, 1952, from the Duke and Duchess of Gloucester.

We have been successful in displacing solid fuel by gas ranges in all our hospitals, in spite of States-owned electricity.

The Guernsey company is not in any way controlled by the Royal Court or the States of Guernsey. We can supply gas of whatever calorific value we choose, and we are not subject to official tests. From the foregoing it might be inferred that the supply varies, but in actual fact we maintain a rigorous check on calorific value by recording calorimeters, together with a constant pressure on the district, in just the same way as if we were under official control. It is a *sine qua non* that whatever commodity you have to offer the public it must be kept of a uniform value, or sales will suffer.

The visitor trade is rapidly becoming the second most important revenue earner—the first being the tomato industry which exports to the United Kingdom about 7 mill. 12 lb. chips of tomatoes each year.

Most of the hotels and large boarding houses rely on gas for cooking and in many cases where solid fuel cookers have been tried out experimentally they have had to be displaced by gas chiefly on the score of speed and elasticity.

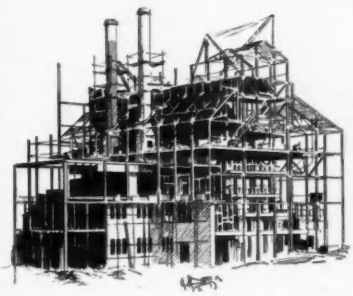
Fortunately for us the Guernseyman is a very loyable though stubborn type—a type much to be admired—and he has to be convinced that some saving will result before

(*Continued on p.* 509)

CONSTRUCTION · SERVICE

PLANNING · DESIGN

the shape of things . . .



THE WOODALL-DUCKHAM VERTICAL RETORT & OVEN CONSTRUCTION CO. (1920) LTD.

Woodall-Duckham House, 67/68 Brompton Road, London, S.W.3

Gas Council Research (Southern) Limited, 3 Please? KENsington 4333 (10 lines)

A Royal Occasion

Her Majesty Queen Victoria — by the Grace of God, graciously granted above "Letters Patent" to William Cartwright Holmes in the year 1855 for "Improvement in the Manufacture of Gas and Apparatus employed therein".

He was the founder of W. C. Holmes & Co. Ltd., one hundred and three years ago. Since then, the products of the company have made considerable contribution to the growth and efficiency of the Gas Industry at home and abroad.

We hope that the Reign of Queen Elizabeth II will mark even greater advances and play a vital part in upholding Britain's place in the world and thus strengthen her contribution to peace.

FOUNDED 1850
HOLMES
HUDDERSFIELD

The first Elizabethan era seems to have been a period of glamour and romance. However, the new Elizabethan kitchen has its advantages—not the least of which is hot water in instant and endless supply from an Ascot, which certainly makes the aftermath of hospitality less formidable.

ASCOT

THE Ascot 715 Balanced Flue Instantaneous Multipoint is without doubt the world's finest gas water heater. It is a product of that enterprise and technical skill that will keep Britain ahead in the reign of Elizabeth II.

Ascot Gas Water Heaters Limited,
255, *North Circular Road, Neasden, N.W.*10.—*WILlesden* 5121.

he is prepared to make any change in his domestic appliances. In consequence we have to be very careful in the publicity policy we adopt. The smart pushing type of canvasser with the usual forcing tactics has no place in Guernsey, whereas a genuine statement of the facts will greatly strengthen the seller-consumer relationship.

JERSEY

GAS was first manufactured in Jersey in the year 1830. In 1856, the undertaking was sold to the present founders and from 1862 the Jersey Gas Light Co., Ltd., made rapid progress. In 1862 there were 1,200 consumers supplied through 15 miles of main. The gas made amounted to 36 mill. cu. ft. In 1952 13,750 consumers were supplied through 124 miles of main. The gas make was 560 mill. cu. ft.

The years 1940 to 1945 were the most difficult in the history of the Jersey Gas Company. We were cut off from all normal sources of supply and had to depend on limited supplies of coal from France. This company, which since the year 1918 was operating under statutory control, was during the period of the occupation placed under the direct control of the States of Jersey Essential Services Committee, which Committee controlled electricity, gas, water, and telephones, thereby preventing these from falling into enemy hands. The sanction of the States Committee was obtained, prior to occupation, to institute a system of gas rationing, based on giving to each consumer an allocation of gas, being a percentage of that used during the corresponding period of 1939. Though this did not give the anticipated savings it did in due course satisfy the occupying powers that a system of rationing was in operation and we did not have to shut off the gas supply during any period of the day, until much later in the occupation. In 1941, the company took over control of all fuel, and a ration system was evolved giving a ration of gas and solid fuel based on the number of people in a household.

Due to lack of coal, we were completely shut down from September 4, 1944, till June 10, 1945. During that period we operated in the Island, at the request of the States, 72 communal cooking centres. These were old-fashioned brick bakers' ovens, heated by wood and operated by the staff of the gas company. During this period there was no fuel whatsoever except a little green wood and tar. The tar was used to mix with wood and with refuse garbage to give some measure of heating which proved of some use in closed stoves. The main steam boilers of our local hospital were kept going for nine months on crude tar, thereby enabling the hospital services to function. We were liberated on May 9, 1945, and the gas supply was resumed on June 10 of that year.

The following appeared in the local Press on June 11, 1945:—

"Welcome Mr. Therm, Housewives' Friend.
Have you ever mixed tar with anthracite?
And chopped green wood from morn till night?
Then used the bellows on bended knee—
To make a cup of ersatz tea?
Filled up your nostrils with steam and smoke—
When flavouring stew with elm or oak?
But Mr. Therm is about again—
Once more he will our lives inflame.
So raise your voices, give a shout—a Shout of Jubilation,
For now he's here it really means the end of the Occupation.'

We are very proud of the following messages sent and received through the Red Cross Organisation:—

Date: January 29, 1943.

To J. W. Rodgerson, Stephenson Clarke, 4, St. Dunstans Alley.

'Chairman and self well. Still carrying on. Hope meet this year discuss affairs of mutual interest. Remember us first opportunity. Keeping chins up.' From Pepin, Gas, Jersey.

And the reply:—

Date: May 25, 1943.

'Received January message. Immediately clear expect Durham specials. Constantly remembering you all. Hope life not irksome. Prospects excellent. Keep cheerful. All well here.' Signed J. Rodgerson.

Shortly after our liberation King George VI, accompanied by Queen Mary, visited the Island. The Bailiff of Jersey, who is Chief Magistrate and President of the States Assembly, was Knighted for his services and among others honoured was Mr. C. W. Duret Aubin, who was H.M. Attorney-General and who received the C.B.E. Mr. Aubin is now a member of the Board of the Jersey Gas Light Company.

After the war we had to start virtually from scratch and a new steam raising plant consisting of three Lancashire type boilers with all ancillaries was immediately ordered and also a new gasholder of ¼ mill. cu. ft. capacity.

The tourist trade of the Island has doubled over pre-war, and we have had to plan for a complete new works and are now awaiting the completion of the erection of a new Woodall-Duckham vertical retort installation of over 3 mill. cu. ft. a day capacity, complete with all ancillaries, to enable us to meet the growing demands for gas in this Island, which we confidently expect will reach 700 mill. cu. ft. per annum in the not too distant future.

AUSTRALIA

AN increase in population of 25% since 1939—16% since 1946—has created many problems in Australia. The population today is approximately 8¾ mill. and it is estimated that it will be 10½ mill. in 1960. The recent increases are mostly due to migrants from European countries of whom more than 50% are from Great Britain. It has been estimated that it takes about five years to provide the capital equipment necessary for each migrant and this has imposed a heavy task on the authorities responsible for the provision of houses, roads, water

Glimpse of the Mortlake Works of the Australian Gas Light Co. In the foreground are eucalyptus trees which grow throughout Australia.

The Yallourn (Victoria) Brown Coal Open Cut. The Gas & Fuel Corporation will be supplied from the nearby Morwell Open Cut, where the overburden averages 54 ft. in depth and the coal 380 ft. in thickness.

Photo by Courtesy of State Electricity Commission of Victoria.

supply, drainage, sewerage, electricity, gas services and so on. In spite of shortages of materials and labour and the necessity for rehabilitation of the Armed Forces, the gas industry has carried out its obligations to the community, as is illustrated by the following figures:—

	Gas Sales, mill cu.ft.	No. of customers	No. of employees
1939 (pre-war) ..	18,970	903,000	9,740
1946 (war's end) ..	29,070	1,065,000	10,390
1952 (approximately)	35,000	1,200,000	11,600

The history of the gas industry in Australia has been one of gradual development in line with the original colonies and after federation with the Commonwealth.

Gas was first supplied in Sydney in 1841 and in Melbourne and Hobart in 1856; Adelaide in 1863; Brisbane in 1865; Perth in 1885. Gasworks were erected in many of the provincial towns and today the number of gasworks throughout Australia is 100. It will be seen that the gas industry has been in operation during the reigns of six Sovereigns.

Organisation of the Industry

The industry is operated partly by private enterprise and partly by Government or semi-Government authorities. Of the total gas sales in Australia 72% is sold by companies and 28% by Government and municipal authorities. The largest company—the Australian Gas Light Company in Sydney—last year sold 12,978 mill. cu.ft. of gas, and if the sales of the other private company operating in the Sydney metropolitan area—the North Shore Gas Company—are added, the total gas sales for the Sydney metropolitan area were 15,235 mill. cu.ft.

The supply of gas in the metropolitan area of Melbourne until recently was by the Metropolitan Gas Company, the Brighton Gas Company, Ltd., and the Colonial Gas Association. Recently, the Government of Victoria formed the Gas and Fuel Corporation, which took over the Metropolitan and Brighton companies, with authority to take over other undertakings in Victoria. The gas sales of the Gas and Fuel Corporation for last year were 8,477 mill. cu.ft.

In Brisbane, Adelaide and Hobart the supply of gas in the metropolitan areas is by private companies and in Perth by a Government authority.

Control of the industry is in the hands of the State legislatures and varies slightly in each State, but generally control of price, quality, and pressure, and accuracy of meters is provided for. The determination of standards for appliances and testing and badging of them is carried out by the National Gas Association of Australia.

New South Wales is favoured with supplies of excellent gas coal, but this is mostly confined to one area. The present-day cost of this coal is approximately 95s. per ton f.o.b. Newcastle. There are also supplies of gas coal in Queensland and this is fairly well spread throughout the southern and central portion of the State. All the other States have to procure their gas coal from New South Wales, though experiments are being made with other coals in some States.

Most of the gas is produced in continuous vertical retorts, which are in use by the major undertakings. There are some intermittent verticals. The provincial undertakings use horizontal retorts. Owing to the uncertainty of supply of New South Wales gas coal during the war, and due to the fact that Victoria has practically unlimited supplies of brown coal, the Gas and Fuel Corporation of Victoria is installing a plant to make gas from brown coal by the Lurgi system. The brown coal is all obtained by the open cut method. The cost of procurement is very low and the reserves are very large. The plant for producing the gas will operate at Morwell, 90 miles from Melbourne, from where the gas will be piped to the metropolitan area through a high pressure steel main.

An interesting feature of the process of making gas from brown coal is the production of the by-products—motor fuels, oils, and tar.

About half the population is concentrated in the six capital cities, but Australia is a land of vast distances and sparse population in many areas. Therefore, there is not much opportunity for grid systems except in one or two cases, notably in connection with the supply of gas from brown coal by the Gas and Fuel Corporation of Victoria

and in the more thickly populated area of New South Wales. The Colonial Gas Association, Ltd., and the Gas Supply Company, Ltd., each operate a large number of works in several States. The latter company recently extended a high pressure supply from Albury across the border of New South Wales to Wodonga in Victoria.

The personnel of the industry is provided for by the Australian Gas Institute, of which Mr. S. R. Preston, General Manager and Chief Engineer of the South Australian Gas Company, is President.

The proprietorship of the industry is provided for by the National Gas Association. There is constant interchange of views between members of the industry in Australia and those in Great Britain and other parts of the British Commonwealth.

Plans are in hand for the expenditure of many millions of pounds on carbonising plants and distribution systems to provide for the rapid increases in the demand for gas, and the future of the industry in Australia is very bright.

THE ISLE OF MAN

IF you happen to be in the Isle of Man on the 5th of July in any year you will probably join thousands of visitors and residents, who travel to the Tynwald Ceremony. For the 5th of July is Tynwald Day—the Manx National Day—a day that has been jealously observed by Manxmen for many centuries to celebrate their freedom and home rule. It is their Independence Day, and means no less to them than the 4th of July means to the citizens of the United States of America.

Tynwald is the name of the Parliament of the Isle of Man. The Island is unique in one respect—it has always possessed Home Rule. It has never sent a representative to the House of Commons.

The Government of the Island has always sat in the Isle of Man. Manxmen claim that their Parliament, Tynwald, is older than the 'Mother of Parliaments' in London. They call it the 'Grandmother of Parliaments,' for it was founded over 1,000 years ago, when the Vikings settled in the Isle of Man, and it has preserved an unbroken existence during the 10 centuries that have since elapsed.

King George VI and Queen Elizabeth at Tynwald Ceremony, Isle of Man.

In those days every freeman had the right to appear at Tynwald and present his grievances, in the presence of the Lord of Mann—the loyal toast is 'The Queen, Lord of Mann'—and this right still exists. In 1945, our late beloved King George VI, and the Queen Mother, presided over Tynwald. They observed even the most meticulous detail of the ancient ceremony.

Just as throughout the centuries the Manxman has affirmed his spirit of freedom and independence, so today the five gas companies—the Douglas Gas Light Company, the Ramsey Gas Light Company, Ltd., the Castletown Gas Light Company, Ltd., the Peel Gas Light Company, Ltd., and the Port St. Mary and Port Erin Gas Light Company, Ltd., enjoy Home Rule. Each Company has its own Gas Regulation Act, 'enacted by the Queen's Most Excellent Majesty, by and with the advice and consent of the Lieutenant-Governor, Council, Deemsters, and Keys, in Tynwald assembled.'

On the Island there are no industries, such as you have, even in your British holiday resorts, which give relief by closing down on Sunday. We have the double concentration of an all-cooker load on the Sunday. For example, in Douglas, on a Sunday between the hours of noon and 1 p.m., our peak load has reached a consumption of 153,000 cu.ft. in this one hour.

The annual consumption at Douglas is approximately 280 mill. cu.ft.; Ramsey, 45 mill.; Castletown, Peel, and Port St. Mary, between 20 and 25 mill.

The first Deemster, a Knight, addresses gas managers by their christian names. Honours and distinctions are humbly carried by the various members of the Boards of Directors of Gas Companies on the Island. For example, a Director of the Ramsey Gas Light Company has recently been elected a Member of the House of Keys. On the Board of the Douglas Gas Light Company, the Chairman has served as a Member of the House of Keys. A Member of the Board is a representative on the Legislative Council (the Manx House of Lords). Another, a Member of the House of Keys, is also on the Governor's Advisory Committee. As for the Scottish Manager of the Douglas Gas Light Company, he should be cast into prison, according to a Manx Law passed in 1432—'That all Scots avoid the land with the next vessel that goeth into Scotland, upon a payne or forfieture of their goods and their bodies to prison.'

If this is his prison, then sometimes in a prison a golden room is found! I presume as 'a payne or forfieture,' His Excellency, the Lieut.-Governor, has elected him a Justice of the Peace.

In the Merry Month of May, Geoff Duke and his T.T. friends arrive. Gas managers rejoice with the thousands and thousands of young folk who come from all over the world to see the thrills and spills of the greatest of all motor-cycle races. More gasworks tar will be required for the roads next winter!

Just as our Government, in its Legislature, has all the vehicles of the Law, so we in the gas industry are equipped to supply all insular needs. We have gas plant to meet the outstanding variations of our peak load periods, compressors for our high pressure supply, gasholder capacity to meet our undeterminable peaks. We grade, bag, and deliver with our own fleet of wagons, our own coke to our own consumers. At the present moment we have no surplus stock of coke in our yards.

We have no industrial load—our load is pleasure.

It may seem strange to the Gas Industry that, to justify his existence and increase the consumption of an undertaking, a gas manager should become a publicity agent. This indeed is what did happen on this island. A gas manager suggested, and was made Honorary Organiser of,

a Highland Gathering in the Isle of Man—the gathering to take place at a period when arrivals were poor.

The late Sir Harry Lauder, Will Fyffe, Jean Forbes-Robertson, the Black Watch, Gordon Highlanders, Argyle and Sutherland Highlanders, and the cream of Scottish athletes and the world's champion pipe bands were all engaged at different periods. The employees of the Gas Company took part in the pageants and became known to the locals and visitors alike as the Gasworks Highlanders. The period when the arrivals were poor became so busy that accommodation could not be found for the competitors. The Highland Game served its purposes—gas consumption has increased during this period by 50%.

Dear Editor—

In your Coronation Number, we in the Isle of Man send cordial greetings to our brothers in gas throughout the British Commonwealth and Empire, and join with them in expressing our loyalty to the Crown, and our Island pride in Her Most Gracious Majesty, Queen Elizabeth II, Lord of Mann.

NORTHERN IRELAND

IT may be useful before giving a brief description of the gas industry's activities in Northern Ireland to summarise the facts relating to its position and attachment to Great Britain and the British Commonwealth.

Northern Ireland comprises six Northern Counties of Ireland with the County Boroughs of Belfast and Londonderry. The Province is governed by its own Parliament according to a constitution and powers granted by the Government of Northern Ireland Act, 1920. The Crown is represented by a Governor, the present holder of the office being Lord Wakenhurst, K.C.M.G.

Parliament consists of a House of Commons and a Senate. The House of Commons consists of 52 Members who are elected for a term not exceeding five years. The Senate consists of 24 Members elected by the Commons, with, in addition, the Lord Mayor of Belfast and the Mayor of Londonderry. In addition 12 Northern Ireland Members are elected to the Parliament of the United Kingdom at Westminster.

When in 1923 the Irish Free State was established the office of Lord Lieutenant of Ireland was abolished and the Duke of Abercorn became the first Governor of Northern Ireland. He was succeeded in 1945 by Earl Granville, whose wife, Lady Granville, is a sister of Queen Elizabeth the Queen Mother. Earl Granville was succeeded in 1952 by the present Governor. The first Parliament of Northern Ireland was opened in state in 1921 by King George V. who was accompanied by Queen Mary, and in 1932 the new Parliament Building at Stormont (Belfast) was officially opened by the Prince of Wales. When in 1948 the Eire Government decided to secede from the British Commonwealth, the electorate of Northern Ireland by an overwhelming majority again decided to maintain its connection with the United Kingdom.

The announcement that Queen Elizabeth II will visit Northern Ireland soon after her Coronation has given extreme satisfaction and in no part of the Commonwealth will she and her Consort receive a more loyal welcome than that which awaits them in Northern Ireland.

Belfast

The Capital City of Northern Ireland accounts for 440,000 of the total population of 1,400,000, and the output of gas, 5,700 mill. cu. ft. per annum, from its municipally-owned gas undertaking exceeds by far the combined outputs of all the other undertakings in the Province. The Northern Ireland Government did not follow Westminster in nationalising its gas undertakings; therefore Belfast and Londonderry have the distinction of being the largest municipal and company controlled gas undertakings respectively in the United Kingdom.

Royal Visit to Londonderry (1945) with the Mayor, Colonel Sir Basil McFarland, BT., H.M.L., A.D.C.

By Courtesy of the Belfast Evening Telegraph.

Belfast is world famous for its shipbuilding, aircraft, linen and rope industries, and their large demands for gas as well as those of the public generally are efficiently met by the municipal gas undertaking under the able management of Mr. J. L. Hyslop.

The City of Belfast, being the seat of the Government of Northern Ireland, has received many Royal visits. The Queen—as Princess Elizabeth—and her husband received the Freedom of the City of Belfast in May, 1949, and the part played by the Duke of Edinburgh as President of the British Association at its meeting in Belfast in 1952 left a lasting impression.

Londonderry

The Second City of Northern Ireland has many associations with the Royal Family dating back to King William III, who in 1688 presented to the Corporation the Mace and Mayor's Chain of Office which are among the city's many treasured muniments of antiquity and historical value. At this time, 1688-89, occurred the great siege which made the name of Derry famous and covered it with glory in the annals of British history.

Among the distinguished names on the Roll of Honorary Freemen of the City is that of Colonel Sir Basil McFarland, Bt., H.M.L., A.D.C. Sir Basil McFarland, who has many business interests in the City, is a Director of the Londonderry Gaslight Company. He commanded a battery of a Derry Regiment in the Middle East during the late war, relinquishing temporarily the office of Mayor for that purpose, and subsequently on the return of the regiment he was accorded the honour of being made an Honorary Freeman of his native city. Sir Basil is Her Majesty's Lieutenant for the City and was recently appointed an Honorary A.D.C. to the Queen.

Londonderry was the main base in the 'Battle of the Atlantic' during the 1939-45 war. This historic city and port was the haven sought by British, Canadian, and American sailors returning from their Atlantic patrols. All allied navies worked together in Derry which at one time was the base for over 120 ships with a personnel of over 30,000 men. Eleven million tons of allied naval shipping used the port during the war and it was fitting that the people of Londonderry in 1945 should witness the surrender of over 60 German submarines. The present

Chairman of the Gas Company, Capt. B. F. McCorkell, was Chairman of the Harbour Commissioners at a difficult period subsequent to the war, and Sir Basil McFarland now occupies that important position.

Major extensions of the harbour at an estimated cost of £250,000 are to be carried out during the next few years and work has already started. The additional harbour facilities together with inducements offered by the Government of Northern Ireland and the Londonderry Corporation will no doubt do a great deal to facilitate the setting-up of new industries which, in the case of Londonderry, are particularly desirable. The staple industry is the making of shirts and collars which are world renowned, but additional industries to absorb male labour are required.

Being now established as a naval base and anti-submarine training school with the prospect of an Admiralty ship repairing depot being established, Derry has become an increasingly important city in Northern Ireland and it is not surprising that the demand for gas has doubled since 1939, the present annual output being 340 mill. cu. ft.

The Admiralty are large consumers of gas, as also are the shirt and collar factories. As regards domestic consumption it is interesting to note that of 2,000 new houses recently erected no less than 92% of the tenants have chosen gas for cooking.

Londonderry was visited by many distinguished personages during and after the war, the most notable event being the visit in 1945 of King George VI. and Queen Elizabeth, with Princess Elizabeth, our present queen, when their Majesties received an enthusiastic welcome.

When the Queen and the Duke of Edinburgh visit Northern Ireland from July 1 to 3 they will receive, not only in the principal cities of Belfast and Londonderry but all along their route, a loyal welcome and demonstration of affection that will not be surpassed in any part of the Commonwealth.

BARBADOS

THINK of an island, roughly comparable in size, though not in shape, to the Isle of Wight—without its railways and without a river of any sort, and set in a tropic sea—its coastline fringed for the greater part with coral reefs protecting sandy beaches: there you have Barbados, most easterly of the West Indian Islands.

Barbados is slightly out of the arc of islands comprising the remainder of the West Indies, and is in fact the only coral island among them. It is for this reason that the island has no rivers and relies for its water supply upon wells sunk into the coral rock. In early days the island was uninhabitable for lack of any soil to cover the bare coral rock and it was only when the volcano on the neighbouring island of St. Vincent erupted and the volcanic dust was blown across that Barbados acquired any top soil.

Interior View of the Showrooms at Barbados.

Now one finds a colourful, charming island—a pleasant, hospitable people, and sunshine all the year round. In fact, some profess to find its almost invariable climate a little wearisome after the changes and chances of our English weather—and indeed it takes a little time to become used to the rapid transition from sunshine to darkness punctually at 6.30 each evening all the year round: no tennis or golf on summer evenings after office hours. But as compensation there is swimming and yachting all the year round, and the steady Atlantic breezes to reduce the tropic heat to more temperate proportions.

Barbados is proud to be called 'Little England,' proud of its unbroken connection with the Mother Country for more than 300 years since the first settlers landed on its uninhabited shores, and proud particularly to have entertained over the years a succession of royal guests, from the visit of King William IV (when Prince William in 1786) up to the recent visit of the Princess Royal, whose West Indian tour had to be curtailed by the last illness of Queen Mary. The Barbadians are intensely loyal to the Crown and would never fail in their demonstrations of affection and loyalty on any royal occasion.

Barbados is a Crown Colony, has an area of approximately 166 square miles, and with a population of more than 200,000 is one of the most densely populated areas in the Empire. The principal exports are sugar and molasses (the whole history of the Island is, of course, intimately bound up with the development of sugar growing), rum and cotton. There has been a gas company in the Island since 1892, the present company having acquired the undertaking in 1908, and now operating under Acts of the Barbados Legislature passed between 1911 and 1951. At present the company's mains supply only Bridgetown and its environs.

Until 1950, gas was manufactured at the company's works by the sea shore on the southern edge of the town. Like other overseas gas undertakings it has always faced problems not met with at home (the difficulties of main-laying and the effect of the sharp coral rock upon pipe when laid can be imagined)—and of course it met difficult times, too, during the wars, since the whole of its supplies of coal and materials, plant and equipment, cookers and appliances, have to be imported and at times these were in very short supply.

For example, there is the story related by Mr. J. W. Brown, who was the company's Engineer and Manager at the time, of the occasion during the first world war when he had to burn anything combustible to keep the supply of gas going. His most remarkable effort was achieved when a ship went aground on the rocks and part of the salvaged cargo, a consignment of Hebrew Bibles, was snapped up by the company to stoke the retorts.

During the second war, too, the company's officials had anxious moments when a German submarine entered the harbour and torpedoed a vessel at anchor. The resulting explosion shook the works quite considerably, and even today the effect can be seen in a slight canting of the gasholders.

Nevertheless the company prides itself on the fact that the supply has never entirely failed, but has always been maintained, with particular regard for such important services as hospitals and other Government institutions. The calorific value and the pressure might not at times have been all that could be desired, but the company never let the consumers go without gas, cost what it might.

Since October, 1951, the company has been supplying to its consumers undiluted natural gas with a calorific value of approximately 1,050 B.Th.U, which is purchased in bulk from the Natural Gas Corporation of Barbados, a Government body set up in 1950 after the Barbados Legislature had passed an Act nationalising all mineral and petroleum rights in the Island. The natural gas comes from the original well drilled by the British Union Oil Company in the course of its search for petroleum. Here the gas is trapped and fed through a main, now also Government owned, to the Government water pumping station, where it is tapped to supply the gas company. Thence the gas is carried, still under its own pressure, through the feeder main to the holders at Bridgetown some five miles away. In

order to make the supply available to the public, this new feeder main was laid at the company's expense, and every consumer was furnished with a new meter to take the increased distribution pressure. Some consumers are supplied directly off the high pressure main en route to the works through an entirely new system of high pressure mains laid in recent years; the bulk of the consumers are still supplied, at reduced pressure, through the original low-pressure system.

The adaptation of the distribution system and the conversion of every appliance in the Island—including that part of the public lighting system which is effected by gas—for use with gas of an entirely different composition and greatly increased calorific value, was a feat of considerable technical skill. Experiments made on similar lines in this country have had behind them the entire resources of the gas industry. In Barbados, a little island 4,000 miles across the ocean, the Engineer and Manager had to rely on the technical assistance, readily forthcoming, of a few manufacturers, and guidance from the Board in London, but very largely upon his own ingenuity and resource. Great credit is due to Mr. D. R. Young for the way in which the change-over was effected without interruption of service and with little or no complaint.

The Directors in London are well aware of the problems, both general and technical, that face the Manager in the changed circumstances—and, in fact, ever since the present company took over, visits have from time to time been made to the works and district by directors and officials from London. Since the last war, the Chairman, Mr. Edward Corbet Woodall, has visited the Island once; the Secretary, Mr. William Cash, twice; and recently the company's technical adviser, Mr. W. A. Bishop, M.INST.F., M.INST.GAS E., has made an inspection of the works and district and has reported to the Board with recommendations for future development.

The new supply has met with general approval, and since its inception many new domestic and industrial consumers have been connected. There is, of course, no heating load to be catered for, and except for use in hotels and cafés, hospitals and like institutions, little call for water heaters. There are few slipper baths in the Island and water for showers seldom has to be raised by more than about ten degrees. But gas cooking and gas appliances are very popular in private houses, hotels and restaurants; and many industrial establishments want to change from oil cooking and firing to gas, so that there is still a considerable potential demand to be met as and when capital for development becomes available.

MALTA

SMALL in size and output in comparison with the undertakings in many other of Her Majesty's dominions the enterprise of the Malta and Mediterranean Gas Company, recently nationalised by the Malta Government and placed under the administration of the Malta Gas Board, has made a worthy contribution to the past century's history. Admitted into the British Empire in 1800 (the act being confirmed by the Treaty of Paris in 1814) Malta played a vital part in the first world war as headquarters of the Mediterranean fleet and was again closely besieged and heavily bombed and bombarded in the 1939-1945 war, some 35,000 houses being destroyed or damaged. In the bomb-scarred capital city of Valetta Viscount Gort, then Governor and Commander-in-Chief, handed to the Chief Justice in September, 1942, the George Cross conferred on the people of the Island for their conspicuous gallantry by King George VI some five months earlier.

The Malta and Mediterranean Gas Company came into being in 1856 and would thus have attained its centenary three years from now had it not gone into liquidation in March, 1953, after handing over the undertaking to the Malta Government. The gasworks is situated just outside the capital city and comprises hand-stoked horizontal retorts and water gas plant capable of producing between 300,000 and 400,000 cu. ft. of gas per day.

The enemy only managed to interrupt supply for five weeks through bombing although in the middle of the war lack of coal caused a shut down for nearly a year. Output for the first period after restarting was only 22 mill. cu. ft. In recent years output has been close upon 100 mill. cu. ft. All coal is imported from Britain—latterly at a cost of over £8 per ton—and the 4,000 odd consumers have paid an average of something over 13s. per 1,000 cu. ft. for their gas. It took some years to make good all the war damage in the area now supplied—the works was partly rebuilt and the company handed over a works with an old type of plant but in a good state of repair. The chief officials at the works are British—Mr. Finucane, Manager; Mr. Abraham, Engineer; and Mr. Davison, Accountant. All the rest of the workers in Malta are Maltese.

'Windows to the Sea.' A view of Barbados Gasworks from the town side.

Addressing the annual meeting of the company in London in 1944—the first since 1940—the Chairman, Mr. Arthur M. Paddon, said that after a hiatus of about a year the company resumed a supply of gas at the earliest opportunity accorded to it by the Government, and the supply has gone on ever since. 'Our people,' said Mr. Paddon, 'showed great fortitude, both the Maltese and European staffs, and Mr. Ferguson, our Engineer and Manager, has been recognised by the Government for his general contribution to what was going on.' Twelve months later Mr. Paddon told the shareholders that for a period of six to nine months in the year covered by the accounts the company had been making gas, but otherwise it had been restricted from doing so. There was a loss on the year but the condition of affairs which occasioned that loss had passed and unless anything very unforeseen occurred the current period would undoubtedly yield a profit. Considerable repairs had by that time been effected, and the plant was capable of putting out more gas than it was in fact doing.

The company held its last annual meeting in September, 1952, followed immediately by an extraordinary general meeting at which the necessary steps were taken to prepare for voluntary liquidation in the event of the Government taking over on November 30, 1952. According to the company's legal adviser at that time failure to reach agreement would probably leave the Government with a gasworks but without a distribution system, and the company with mains and services but with no source of gas supply. Shortly before the appointed day, it was agreed that the Government should take over, and negotiations as to the price to be paid for the assets are still proceeding. The liquidation meeting was held in March and the closing chapter of an interesting story of private enterprise was written.

Ancient and modern transport in Ceylon. The Colombo Gas Company still delivers its water heaters and other gas appliances by bullock cart.

COLOMBO

THE Colombo Gas and Water Company is registered in Great Britain and operates, as a gas company only (its power to act as a water company has never been exercised), in the town of Colombo and the adjoining Urban District of Dehiwela-Mt. Lavinia, Ceylon.

Ceylon became a Crown Colony of Great Britain in 1802 and Colombo, its capital, was a town of about 50,000 inhabitants in 1868, the year in which the company was formed. Authority for supplying gas was granted by a Ceylon Government Ordinance in 1869 and by an indenture in the same year the Colombo municipal council made covenants with the company in relation to the supply of gas within its area and also assisted the company in obtaining a site for the works in the centre of the town. This was described at the time as a 'slushy bog' and had been rejected as impossible for the building of police barracks and a public market. Indeed there was a certain amount of chuckling by officialdom over the way the company was 'putting its foot in it.' However, such was the manner in which the work of erection proceeded that within two months of the start the *Ceylon Times* of March 17, 1871, had an article of which the following is an extract.

'The transformations going on at the company's works will have a touch of the marvellous about them . . . . . Perhaps the most startling pantomime trick about the whole affair is the marvellous transformation of a shaky treacherous swamp into a hard solid block of land on which ponderous structures are being raised with foundations of only a few feet in depth. One of these erections, the gasholder, a structure of iron plates, will weigh 4,000 tons when completed and charged with water . . . . . Never since the time when Cinderella's obliging aunt kindly transformed her pumpkin into a coach has there been such a metamorphosis brought home to any of our colonial minds as this one of the slushy bog conjured into ground of metallic solidity.'

The works was practically complete by September, 1871, and was inspected by the Governor, Sir Hercules Robinson, who expressed his gratification with all he saw. It was planned to commence supply on October 5, but only 10 days before this appointed day for the lighting up of Colombo a serious accident to the gasholder occurred. Soon after being filled with water the tank burst, some of the wrought iron bands encircling it apparently having given way, and the holder was practically wrecked. This, of course, meant the postponement of the supply until a new tank was delivered from Britain and the holder re-erected.

The work was completed in August, 1872, and the town was lit by gas for the first time on August 10. The works still occupies the same site, now rather congested, it is true, and the company also now has a district gasholder in the southern part of the town. From the first, carbonisation has been in horizontal retorts. There have been extensions to the plant as the company's sales have increased, and in 1946 a carburetted water gas plant was installed. Various sources have been drawn on for coal supplies; the earliest shipments were from England and Australia. Japan also supplied coal but for many years now Indian coal has been almost exclusively used. This is shipped from Calcutta or Vizagapatam and discharged in Colombo Harbour into lighters and landed at storage grounds about three-quarters of a mile from the gasworks. Daily deliveries are made to the works, in these days by lorries, but up to fairly recently this transportation was done by bullock carts. Native labour is employed in every department of the company's activities and the company ranks as one of the largest employers in the town.

Ceylonese overseers, clerks and workmen permanently employed number about 350. The executive staff consists of European manager, assistant manager, works foreman, distribution engineer, assistant distribution engineer, accountant, assistant accountant, and a Ceylonese assistant accountant. Two local business men with the manager act as a local committee.

The company's area of supply extends from three miles north of the gasworks to seven miles south and over 150 miles of main are laid throughout the district served. From the first day gas was supplied in Colombo, there has been public lighting, but there is now increasing competition by the Government electrical department and this phase of the company's business is declining. Domestic and industrial sales have been maintained, however, and the total sale of gas for 1952 has only been exceeded twice in the company's history.

Domestic requirements in tropical countries differ considerably from those in England. A gas fire is a thing practically unknown but humid conditions cause a demand for more baths, and water heating is a more important

part of the load than here. Cooking is more frequently done by native servants and the use of large bowls for rice and curry stuffs creates a demand for cookers with large hotplates. There are modern installations in many of the large residences and hotels, and mention may be made of Queens House and the Galle Face Hotel, the fitting up of both of which was referred to in the report of the Directors to the shareholders in 1871 and both of which appear in the company's present list of large consumers.

Queens House is the residence of the Governor-General of Ceylon and it is here the Queen and the Duke of Edinburgh will probably be entertained during their visit to the Island while on their return journey from Australia and New Zealand early next year. The widely known Mt. Lavinia Hotel is another using gas for water heating and cooking. This attractive building was formerly the residence of Governors of Ceylon. Colombo is also up to date in respect of its crematorium, which is gas-fired and was erected by the company in 1940. This installation involved many unusual considerations, as the practices and prejudices of several different religions had to be borne in mind, the building for instance having to be so constructed that mourners could walk around the coffin.

In connection with distribution, it may be of interest to mention that, although difficulties with dry meters have to a large extent been overcome by using special tropical dressing on the leather diaphragms, there are still about 3,000 wet meters in use in Colombo. The company is proud of its contribution to the life of Colombo.

Evidence of the consideration shown by the Colombo Gas Company for the welfare of its employees is afforded by this picture of a row of modern houses built by the company near the gasworks.

BOMBAY

THE passing of the Bombay Gas Company from British to Indian control in 1947 removed from our own yearly round of engagements the pleasurable visits we used to pay to the annual general meetings in London, but it did nothing to diminish the importance of the company in the industrial life of India. Comparative statistics for recent years, indeed, show that the company has continued to grow in every direction. The company was first registered in this country in 1862 and for many years it was very slow to develop, mainly due to economic conditions in India, such as plague, pestilence, and famine. Up to 1905 gas sales had reached only 128 mill. cu.ft. per annum; by 1942 they had reached 859 mill cu.ft.

The site was selected and the works and plant were designed by the famous civil engineer, Mr. Thomas Hawksley, who also planned the distribution system. The works was completed in 1866, when many streets were equipped with gas lighting, and gas installations were fitted into many public buildings, shops, and private residences. About 1905 a new regime took over the Directorate, the Management in Bombay, and the Secretaryship in London, and the company began to go right ahead. Such well-known gas industry names as Henry Edward Jones, Charles Gandon, Charles Hunt, and William Graham Bradshaw now controlled the policy of the company. The Bombay works was under the charge of Arthur Rodney Burch, who was given every encouragement to enlarge and develop.

Taken from entrance gates of works looking west, Bombay.

The gas making plant consists of horizontal retorts and water gas sets, and the company has a well-equipped laboratory, a carpenters shop, pattern shop, foundry, blacksmiths shop, machine shop, meter testing and tinsmiths shop, and several large stores. For the benefit of the employees there are tennis courts, well-laid out gardens, and a social club. The gas distribution system which is worked through three governors consists of over 200 miles of mains and 800 miles of services. There are several compressing stations on the district and an extensive system of high pressure steel mains.

Twenty years later gas sales had increased to 368 mill. cu.ft. per annum, and the capital spent per mill. cu.ft. sold had been reduced from £1,752 to £980. Changes then occurred in both the directorate and the Bombay management. The death of Mr. H. E. Jones left the company the poorer, but his place was taken by Mr. W. G. Bradshaw, who was to be joined by Mr. A. M. Paddon and Mr. Stanley Hunter Jones (later to become Chairman). Mr. Burch had retired in 1925 and no-one did more to push the activities of the company than Mr. William Thomas Lane, who had taken over the duties of General Manager and Engineer. Mr. Lane had been in the company's service since 1900 and was well fitted to control the company in India. From 1925 gas sales continued to grow as follows: 1930, 439 mill. cu.ft. (capital spent per mill. cu.ft. sold, £834); 1935, 504 mill. cu.ft. (capital per mill., £773); 1940, 661 mill. cu.ft. (capital per mill., £610); 1945, 1,100 mill. cu.ft. (capital per mill., £374).

In the 82 years from the formation of the company until it passed into Indian ownership there were six chairmen, seven managers in Bombay, and four secretaries. The first chairman was Mr. D. T. Evans, Q.C., and he was followed by Mr. R. Davidson (1886-1903), Mr. H. E. Jones (1903-25), Mr. W. G. Bradshaw (1925-41), Mr. H. H. Macleod (1941-42), and Mr. S. H. Jones (1942-47). Successive managers in Bombay were Mr. T. Proud, Mr. C. Gandon, Mr. W. Scott, Mr. L. Penny, Mr. F. W. Chamberlain, Mr. A. R. Burch, and Mr. W. T. Lane. The first secretary, Mr. W. Marshall, was followed by Mr. J. H. Perrins (1883-1906), Mr. A. Dixon (1906-32), and Mr. Ernest Comber, who retired in 1947.

When the company passed into Indian ownership in 1947 all the Directors, London staff, and London auditors resigned or had their services terminated. The Bombay Gas Company had always had a strong and representative Board, especially during the nineteenth century. In addition to those mentioned one calls to mind Field Marshal Sir Evelyn Wood, V.C., Hugh Henderson Mcleod, Bertram Ellis, B. Murton Gill, and Sir George Evetts. All of them have been connected with the gas industry or with India, either technically or in an administrative capacity. The gas interests of the Jones family (perpetuated by the appointment last year of Mr. Henry H. F. Jones as Deputy Chairman of the Gas Council) go back 100 years; the Paddon family and the Gill family nearly as long. Sir George Evetts was connected with the company from the days when he was articled to Henry Edward Jones 53 years ago.

Our last close link with the Bombay Gas Company was through Mr. E. Comber, who succeeded Mr. Alexander Dickson as Secretary in 1932, and who had been in the service of the company since 1902. Mr. Comber, who retired when control went to India, saw the company grow from an insignificant 100 mill. to 1,100 mill. cu.ft. of gas sold in a year, and he had no small part in helping the Board in its successful deliberations.

CALCUTTA

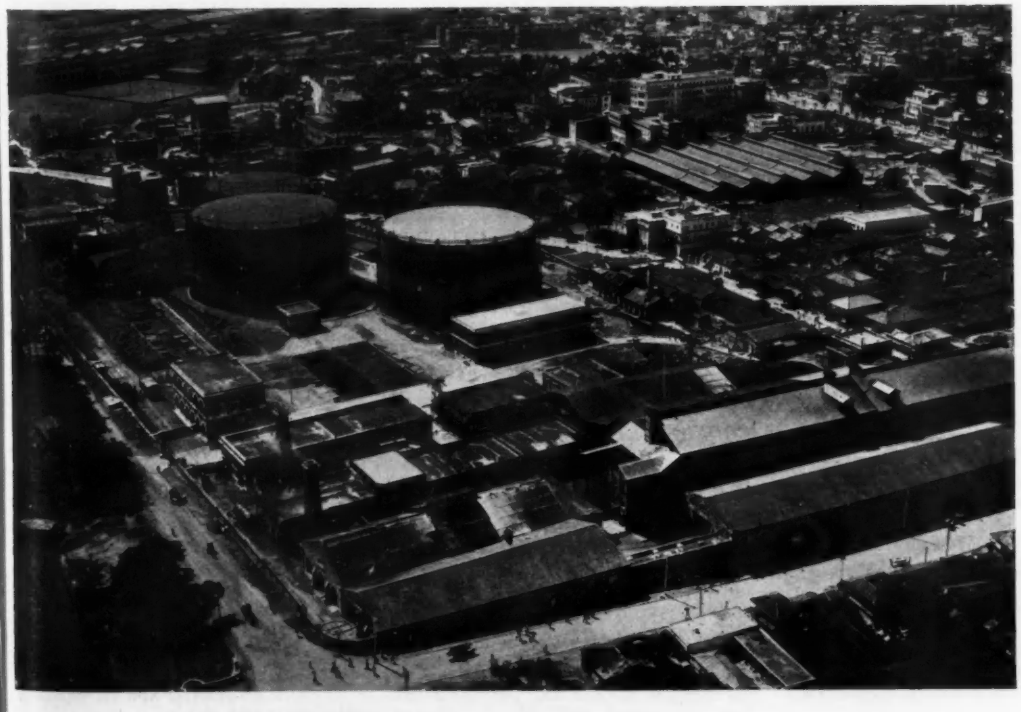
THE Oriental Gas Company was founded in 1853 and therefore is celebrating its centenary this year, along with the Indian Railways. Although both the gas company and the railways are now Indian owned and controlled, they pay tribute to the pioneer spirit of the British people. Actually, the Oriental Gas Company is one of the oldest companies still functioning under the United Kingdom Joint Stock Companies Act.

The supply of gas to the City of Calcutta did not commence until 1857 owing to the many vicissitudes it experienced at the commencement of its career, including the loss of two steamers, which contained large consignments of the original plant and machinery. It also suffered setbacks at that time owing to the death of successive engineers from the extreme climatic conditions.

Perusal of old records now make very interesting reading. The company in its annual report for 1858 stated to its shareholders that its then public lighting, consisting of 55 lamps, was a great success, and the public accepted street lighting as if it had been used to it for 20 years, barring always the wonderment and excitement of the population. During the first week the lamps were lit immense crowds paraded the lighted streets, and their conjectures as to the cause of the light were amusing. It was also reported that each evening the lamp lighter was followed by a crowd who gave shouts of astonishment as each lamp was lit.

An incident in 1903 illustrates the difficulties with which the staff had to contend owing to local customs. Prepayment meters were then introduced into Calcutta and records show that in the opening stages everything went well until someone suggested that the gas company was endeavouring to obtain payment for gas in advance and it was reported at the time that this temporarily checked the progress in this connection. Actually, it would appear that this innovation was a failure. Prepayment meters have not since been used in Calcutta.

From 1857 until 1910 gas was principally used for lighting only. There was practically no cooking or water heating load at that time and the total sales had reached the figure of 300 mill. cu.ft. During that year a new horizontal retort house of 14 beds of eights was erected and stoking machines were installed. Also during this period the company's European staff in Calcutta was augmented with a view to obtaining a day load. By



Aerial view of Calcutta Gasworks.

1925 sales had increased to 500 mill. cu.ft. and in addition to the domestic load, the company was, by attractive tariffs, obtaining large increases in industrial business.

By 1940 sales had amounted to 700 mill. cu.ft. and by 1947, when control of the company passed to India, sales were 840 mill. cu.ft., the number of public lamps at that time being over 16,000, which represented 12% of the sales. It is interesting to note that in 1910 there was a total of 12,000 public lamps, which then represented 53%. These figures show the great headway that was made in the domestic and industrial field.

The capital of the company has remained stationary for many years at £300,000 and all the cost of the additional capital expenditure required to meet the ever increasing demand for gas has been met out of the profits. The capital per mill. cu.ft. of gas sold in 1910 amounted to £1,000. This had been reduced by 1946 to £358 per mill. cu.ft. These figures indicate the sound control and management of the undertaking. As mentioned, since 1947, the company passed from directors in England to directors in India and this progress has since been maintained.

The company, from its commencement, was always associated through its directors with London companies. One of its original directors was a member of the then Ratcliffe Gas Company, which later formed a part of the Commercial Gas Company. Among the company's directors during more recent years were Mr. Stanley H. Jones, Mr. W. G. Bradshaw, and Mr. A. M. Paddon, all of whom were connected with the Commercial Gas Company, as well as with other gas companies.

Sir George Evetts was Consulting Engineer and during the last few years before control passed, he was Chairman of the Company. Mr. B. Murton Gill, brother of the late Mr. Geoffrey Gill, was also a member of the Board.

The Kitchen of the Presidency General Hospital, Calcutta.

The company has always had a close link with the Bombay Gas Company and this link is still maintained by the present directors in India.

The Secretary of the company in London in 1947 was Mr. A. W. Hentsch, who joined the Company in 1910. Consequent on the passing of control to India, his services were terminated and an Indian secretary was appointed in Calcutta. Friends in the industry meet him from time to time and he still maintains a keen interest in the company he served so long and so faithfully.

WE thank these authors who co-operated in the preparation of the foregoing articles:

SOUTH AFRICA — **J. G. Curnow,** *Engineer and Manager, Gas Department, City Council of Johannesburg.*

NEW ZEALAND — **E. F. Gorman,** *Engineer, Christchurch Gas, Coal and Coke Co., Ltd.*

GUERNSEY — **R. G. Luxon,** *Director, Engineer, Manager and Secretary, Guernsey Gas Light Co., Ltd.*

JERSEY — **S. P. Pepin,** *Managing Director and General Manager, Jersey Gas Light Co., Ltd.*

AUSTRALIA — **R. A. Schuchard,** *Managing Director, Gas Supply Co., Ltd., Melbourne.*

ISLE OF MAN — **A. R. Bisset,** *Engineer and Manager, Douglas Gas Light Co., Ltd.*

NORTHERN IRELAND — **G. Walmsley,** *Managing Director, Engineer and Secretary, Londonderry Gaslight Co.*

BARBADOS — **G. Dalby,** *London Office, Barbados Gas Co., Ltd.*

WE are indebted also for help received from:

A. W. Hentsch *for* BOMBAY AND CALCUTTA
F. W. Edwards *for* COLOMBO AND HONG KONG
G. Murray Burton *for* MALTA

Institution of Gas Engineers

Presidential Address in Coronation Year

By G. E. Currier, O.B.E., M.I.Mech.E.

I AM happy to be able to record that the Institution of Gas Engineers has enjoyed another year of progress. We all received with much pleasure and appreciation the announcement that the Queen has been graciously pleased to grant her patronage to the Institution. The Duke of Edinburgh has also done the Institution a signal honour by consenting to become an Honorary Life Member. The Institution is deeply grateful to Her Majesty and His Royal Highness for this encouragement, which, I am sure, will serve to spur all members to even greater efforts in the pursuance of their professional duties.

The fifth meeting of the International Gas Union was held in Brussels in June, 1952. This Conference, which was supported by a contingent from the Institution of Gas Engineers numbering more than 150, was most successful in every way.

Advancement of Education

The advancement of education in the gas industry continues to be one of the most important activities of the Institution. The new regulations for the examinations for Associate Membership have aroused a certain amount of controversy. I am sure we all agree that, in so far as these regulations tend to raise the standard necessary for admittance to Corporate Membership of the Institution of Gas Engineers, they are a step in the right direction.

The close liaison between the Gas Council and the Institution in technical matters has been maintained and strengthened during the year. Under the procedure established for the provision of technical services to the Council, panels of experts have been appointed to consider and report upon matters referred to the Institution by the Gas Council.

During the second world war, the gas industry made an invaluable contribution to the efforts of the nation, but at the end of the struggle had accumulated considerable arrears of reconstruction of and extensions to production plant and distribution systems.

With the passing of the Gas Act, 1948, the industry underwent a revolutionary reorganisation. The framework of the reconstituted industry is now well established, and it can be claimed that since May 1, 1949, it has made significant progress towards an improved service to its customers.

More recently we have received the results of the deliberations of the Ridley Committee, and have seen the recommendations in its Report accepted by the Government.

In view of the war's effect upon the gas industry, and the changes brought about by the Gas Act, 1948, also bearing in mind the likely repercussions of the Ridley Report, it is thought that a review of our position today, *vis à vis* the other fuel industries, may be of interest.

Mr. G. E. Currier, O.B.E., who has just completed his year as President of the Institution, has been Deputy Chairman of the North Eastern Gas Board from its inception, having previously been Engineer and Manager of the Bradford Corporation Gas Department since 1934. He was formerly chief assistant at Smethwick, works manager at Meadow Lane, Leeds, and deputy engineer and manager at Bradford before succeeding Mr. E. Crowther in the senior position.

Coal a Dominating Factor

The dominating factor in the economics of the carbonisation industries is the price of coal. It has been estimated that in 10 years' time the gap between the output of coal and the country's needs will be in the region of 20 mill. tons per annum. We learn that the National Coal Board is taking steps to increase production beyond the figure of 240 mill. tons per annum forecast in its 'Plan for Coal,' but that this additional coal can only be obtained by continuing production at the less efficient collieries, and the effect of this must be to increase the average cost of coal production and the manpower required in the mines. While this addition to the nation's coal bill may impair British industry's ability to compete in world markets, it has been argued that it is essential to have, not only a sufficiency of coal to meet inland requirements, but also a surplus for export. Much has been said and written of the need to export raw coal; a target of 30 mill. tons per annum has been quoted, and it has been stated also that the best coals must be reserved for this market. We in the carbonisation industries appreciate the arguments in favour of coal exports, but we wonder whether it would not be better, on balance, to use the export coal to meet the full requirements of these industries.

Coal Price Policy

The National Coal Board has full control over the quantity, quality and price of this raw material, which is the principal item in our manufacturing costs. Hence the selling prices of our products are largely dependent upon the policy of one of our principal competitors in the fuel market. All consumers have had to bear numerous and substantial increases in the price of coal during recent years, but, because coal charges form such a large part of our manufacturing costs, these increases have borne more heavily on the carbonising industries than on any other coal users. Apart from the general overall increases, the carbonisation industries have suffered the effects of the National Coal Board's new coal price structure. The third storey of this edifice was completed in December, 1951, and this, like the two lower ones, imposed higher prices on the gas industry, and gave lower prices to competitors. Table 1, on p. 523, shows how subsequent percentage additions to coal prices tend to widen the gap.

The gas industry has never accepted the Coal Board's policy of using three different methods of valuation for carbonising, steam-raising, and domestic coals, respectively. The only just and reasonable assessment of a coal's value is based on its thermal content, adjusted possibly for the presence in it of abnormal proportions of ash and other undesirable substances. Is it in the national interest to make those industries that use coal most efficiently pay a premium on their purchases to subsidise, in effect, those consumers who use coal at efficiencies as low as 20%?

We realise that it will be necessary to carbonise more of the weakly caking coals, and that the successful use of these coals will require the installation of plant that will really blend, rather than mix, coals; this plant may add as much as 5s. per ton to the cost of coal. It is hoped that the diversion to the gas industry of an increasing tonnage of these weakly caking coals will not be taken as justification for increases in their prices. The real need today is for a stabilisation (if not a reduction) in the

(Continued on p. 523)

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prices of coals for carbonisation.

Report of the Ridley Committee

The post-war reorganisation of the major fuel industries under State control provided a golden opportunity for the co-ordination of production, supply, and utilisation of all fuels in the best interests of the nation. Those of us who recognised the need, and saw the opportunity, anticipated with great expectation the Report of the Ridley Committee on 'National Policy for the Use of Fuel and Power Resources.' We hoped for a precise definition of a policy that would enable our raw coal resources to be used with the greatest economy and efficiency, and with maximum benefit to the nation, irrespective of any sectional interest, but the Report of the Committee has proved most disappointing.

A principle laid down by the Committee was that, within a framework of prices and tariffs related to the cost of producing each fuel, the pattern of fuel usage should be determined by the consumer's own choice, presumably on the assumption that a choice which is right for himself will be right for the nation. We recall that, following the austerities of wartime, it was considered necessary to increase the production of civilian consumer goods as quickly as possible to fill the shop windows. Under this policy, small electric fires were produced and sold in very large quantities in 1946 and 1947. These fires are used at the times when they are of most benefit to the purchasers, that is, in periods of peak demand during cold weather. This demand has been one of the principal causes of the load shedding and power cuts that caused hardship to domestic electricity consumers, and loss of industrial production. One naturally asks whether, in such circumstances as these, freedom of choice is altogether in the national interest, or whether the country is not evading the issue by failing to direct the use of particular fuels and appliances in certain conditions.

Assessment of Efficiency

I would refer now to the assessment of the efficiency of gas production and distribution. The method used in the Report to calculate these efficiencies has been the subject of widespread discussion throughout the industry. Many feel that it is unfair to debit all thermal losses to the production of gas, leaving none to be charged against the production of coke, tar, and other by-products. This system, using the figures for the financial year ended March 31, 1951, gives a production efficiency of 53.6% and a combined production and distribution efficiency of 48.4%. The problem was debated at the 18th Autumn Research Meeting, in November, 1952, following the presentation by Mr. J. E. Davis of a paper on 'Thermal Efficiency in Gas Production and Utilisation,' but at the end of the discussion both schools of thought were unconvinced, and could only agree to differ. One point, which all accepted, was that the raw coal equivalent for the provision of any domestic heat service by gas and coke was generally less than that required for the same service by any other combination of fuels, though this figure must be separately calculated for each application of the various fuels to any particular service. My view is that, in considering gas production and utilisation, regard must be paid to the thermal value of the other products, particularly coke and breeze. They are not used for making roads, but are valuable smokeless fuels, which are more efficient than the coal they replace. Indeed, the Electricity Authority is pleased to buy, and we are pleased to sell, appreciable quantities of coke breeze for steam raising. Incidentally, it will be recalled that during and since the war the Fuel Expenditure Index was used to measure the efficiency of the carbonisation process.

TABLE 1.—*Effects of Recent Increases in Coal Prices*

	Gas Coal	Coal for Electricity	Average for the Country
1	2	3	4
	Per ton	Per ton	Per ton
3rd Stage in New Coal Price Structure	+ 1s. 2d.	−1s. 3d.	No change
10% Increase, December 31, 1951	+ 5s. 5d.	+4s. 4d.	+ 5s. 0d.
10% Increase, March 2, 1953	+ 6s. 0d.	+ 4s. 9d.	+ 5s. 6d.
	+12s. 7d.	+7s. 10d.	+10s. 6d.

Criticism has also been directed at the figure of 90.3% quoted in the Report as the efficiency of gas distribution; this figure may lead some to think that 9.7% of the gas produced is lost in distribution. We in the industry know that this is not so, but that, under normal conditions of supply, the loss of gas due to leakage is of the order of 1% only.

The Gas Industry Today

The necessity for co-ordination of the policies of the fuel industries is obvious, and it is felt that some progress has been made in this direction by the appointment of a Committee of the Chairmen of the nationalised coal, gas, and electricity industries under the Chairmanship of the Minister of Fuel and Power.

We admire the faith and courage of those pioneers who, 150 years ago, established this industry based upon what now appears to us as a very primitive process for the manufacture of gas for what was once described as the 'miracle of lighting streets by burning smoke.' Since it was founded, the gas industry has experienced many changes of fortune, with alternate periods of slow progress followed by rapid expansion as new discoveries improved the means of producing or using town gas. The growth of the industry was accelerated by two world wars, and, in particular, wartime experience revealed the superiority of gas for many industrial processes.

There have also been periods when progress was brought almost to a standstill, but the means have always been found to overcome the difficulties of the day and to carry the industry forward with renewed vigour and increasing outputs. The means have usually been the skill, imagination and application of the scientists and technicians who have laboured, sometimes without adequate reward, to bring the industry's technical efficiency to its present high level. They still continue their efforts, and at the 18th Autumn Research Meeting we learned something of the progress they have made in the investigation and trial of several projects connected with existing or new processes for the manufacture and utilisation of town gas. We hope that the commercial success of some, if not all, of these projects can be established in time to help the industry through the next phase in its history, for that phase is one in which we shall surely have to face the severest competition from other fuels for the custom of a public growing more critical in its choice of appliances and fuels.

TABLE 2.—*Gas Sold—Great Britain*

Year			Mill. Therms	Increase over Previous Year %
1			2	3
Calendar Year		1940	1,475 approx.	—
,,	,,	1	1,555 ,,	+5.4
,,	,,	2	1,675 ,,	+7.7
,,	,,	3	1,691 ,,	+1.0
,,	,,	4	1,770	+4.7
,,	,,	5	1,821	+2.9
,,	,,	6	2,002	+9.9
,,	,,	7	2,094	+4.6
,,	,,	8	2,178	+4.0
,,	,,	9	2,241	+2.9
,,	,,	1950	2,337	+4.3
Financial	,,	1	2,460	+5.3
,,	,,	2	2,514	+2.2

Calendar Years from the *Ministry of Fuel and Power Digest.*
Financial Years from *Gas Council Annual Reports.*

During the last war, gas sales increased by some 20%. It was generally anticipated that sales could not continue to expand at this rate after the war, though many considered that the rate of increase forecast in the Heyworth Report was too conservative. It will be seen from Table 2 that gas sales did in fact rise even more rapidly after than during the war. But it may be, and indeed there are already indications, that over a longer period the Heyworth Committee's estimate of a cumulative increase of 2% per annum will not be very wide of the mark.

It is interesting to compare the rate of gas consumption in the United States of America with that in this country. The President of the Gas Appliance Manufacturers of America has stated that the consumption *per capita*, which is 16 times that in this

country, increased by 287% between 1935 and 1950, whereas in the United Kingdom, in the same period, it increased by 64% only.

Following the successful conclusion of the war, many of our people anticipated a rapid return to pre-war conditions, with an abundant supply of material things available at no great cost in money or labour. Their expectations of such a Utopia have not been realised. On the contrary, the cost of living has mounted steadily, and wages and salaries have never quite kept pace with it. Further, we have witnessed a reduction in overtime and week-end work, and less employment of married women. The spending capacity of the people has lessened, and this has been followed by a gradual change from a sellers' to a buyers' market. The fall in spending capacity has affected most industries, including those concerned with supplies of fuels, and in years to come great masses of the people may find it too costly to use to the maximum the refined fuels, gas and electricity. If gas is to have its share of the restricted market, advantage must be taken now of every possible means of reducing costs of production, distribution, and utilisation.

Cost of Equipment

One of the principal factors in the increasing cost of gas manufacture is the ever-rising cost of capital equipment; the charges for plant of all kinds are now about three and a half times what they were before the war. When the war ended, the industry had much leeway to make up in the reconstruction and extension of production and ancillary plant and distribution systems, and many large orders for plant had been placed prior to nationalisation. At May 1, 1949, much still remained to be done, and, at a time when capital costs were already at a very high level, further large orders had to be placed with the manufacturers covering the new reconstruction, extension, and integration schemes made possible by the reorganisation of the industry. With some schemes now finished and others nearing completion, the industry is beginning to feel the effects of the additional capital charges on manufacturing costs. The capital charges of the North Eastern Gas Board during the past three years, together with the estimated charges during the next eight years, are used in Table 3 to illustrate this point.

Some of the schemes will effect economies in operational costs, and in repairs and maintenance, to counterbalance the heavier capital charges. For example, in the area of the North Eastern Gas Board, the replacement of an obsolete carbonising plant by a modern one with a daily capacity of 5 mill. cu. ft., at a cost of £700,000 shows, after meeting capital charges, a net saving of £36,000 per annum, or 1.23d. per therm, with an 80% load factor.

Again, the modernising of a mechanical coal-handling plant, dealing with 85,000 tons per annum, at a capital cost of £85,000 will, after meeting capital charges, yield a net saving of £6,500 per annum, equivalent to 16d. per ton of coal handled.

TABLE 3.—*North Eastern Gas Board—Capital Charges.*

Year ended March 31	Capital Expenditure (£ mill.)	Total Capital Charge Int. and Deprec. (£ mill.)	Per Therm Sold (d.)
1	2	3	4
1950	2.510	0.865	1.60
1951	2.556	0.932	1.56
1952	2.945	1.226	2.00
1953	2.898	1.468	2.39
1954	3.117	1.709	2.80
1955	3.258	1.871	2.98
1956	2.811	2.071	3.24
1957	2.500	2.218	3.40
1958	2.000	2.336	3.50
1959	2.000	2.421	3.55
1960	2.000	2.511	3.61

The estimated costs are based upon a cumulative increase in gas output of 2% per annum.
NOTE.—*Depreciation.*—Approximately 3% on additional expenditure.
Interest.—Temporary Loans 4%. Overall average just under 4%.

Competition

In 1946, the Simon Committee published its recommendations for a national domestic fuel policy, which included proposals for the replacement, within 20 years, of all the nation's bituminous coal fires by appliances using smokeless fuels, the desire being to reduce atmospheric pollution, to increase the standard of comfort in the home, and to reduce the net consumption of coal, or coal-equivalent, for domestic heating. In seven years there has been a little progress towards the reduction of atmospheric pollution. Coventry and Manchester have led the way in establishing smokeless zones, and other towns and cities are following suit. After their experiences in the fogs of last winter, the residents of all large towns must surely welcome and support this trend. The loss and inconvenience caused by transport delays, and the remarkable increase in sickness and death during periods of fog are the most obvious of the economic and social losses suffered by the country as a direct result of smoke emission.

There has been some progress in the design and production of the improved appliances necessary for the more efficient combustion of solid fuel for domestic space and water heating. The publicity given to fuel problems following recurring fuel crises in the post-war years has made the public alive to the need for coal economy. As a result, the new appliances have found a ready sale, but their use as all-night burning grates, using low grade bituminous coal, has increased coal consumption and atmospheric pollution.

It is clear that the provision of improved grates is only one step; the next is to convince the public that the grates can only give the desired results if the right fuel is used. The right fuel is a smokeless fuel, of consistent quality, and of the size appropriate to the particular appliance. The gas industry, as the producer of the bulk of the nation's smokeless fuel, must accept the responsibility for ensuring that the right fuel is always available in the amounts, and at the times, specified by the consumer. Before the Simon Report was published, a Committee was appointed by the Institution to enquire into and make recommendations on coke grading, and on the properties of coke in relation to its domestic and industrial utilisation. This Committee presented its Report* in the autumn of 1942. In 1950, a Coke Marketing Panel, appointed by the Gas Council, also published a report with recommendations for the development of coke markets. These reports covered the subject of coke grading, preparation, and marketing most thoroughly; it is regrettable that so little has been done to carry out their recommendations. With the shortage of steel and other materials and the urgent need for the reconstruction and extension of production plant, the installation of modern coke-grading and preparation plants has in many cases had to be postponed, but the erection of these plants should now be given high priority for capital and steel.

Other interests are preparing their plans for the production and supply of the smokeless solid fuel which is required to implement the recommendations of the Simon Committee. The National Coal Board has increased the output of its Aberaman plant for the production of carbonised briquettes, and it is pressing on with intensive research into methods of improving the process, to take advantage of the increasing tonnage of low ash fine coal recovered by the froth flotation plants now being installed at many collieries. It is also developing plant for pre-oxidising or pre-carbonising otherwise unsuitable coals to adapt them for the Phurnacite process.

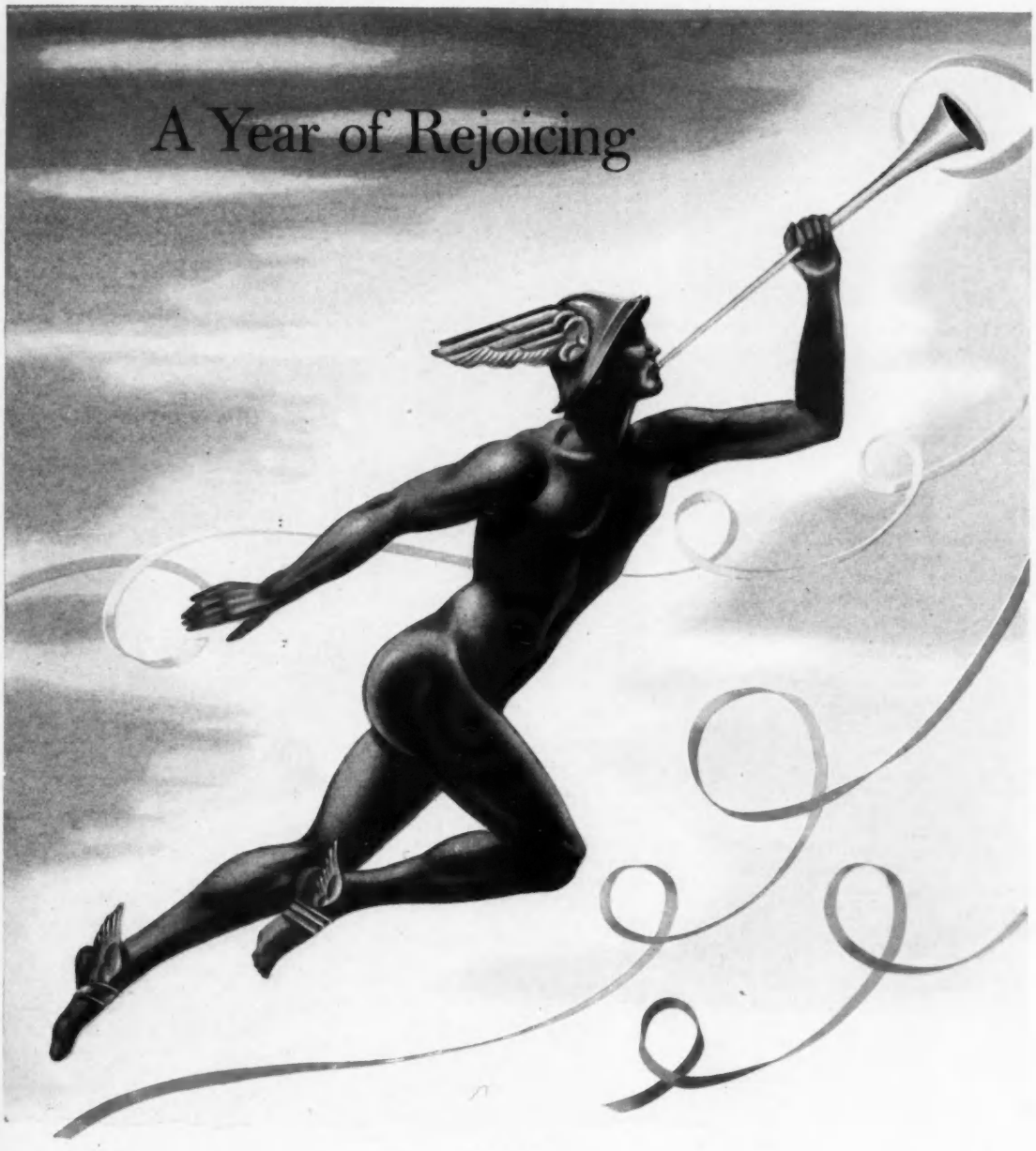
In its 'Plan for Coal' the Board indicated that, by 1956, 30% of its existing coke oven plant would have been replaced by modern plant. While the new ovens completed by the Board have not yet materially increased the tonnage of hard coke for the domestic and industrial consumer, we should take note of the remark in the Board's Report for 1951:—

'To lessen their dependence on the demand for metallurgical coke, which has in the past fluctuated widely, most of the new plants will be able to make either metallurgical coke or coke for industry and the domestic market.'

Should the steel industry maintain its full production programme during the next 10 years, it is estimated that the amount of hard coke available for the domestic and industrial consumer will be 1.1 mill. ton less than it was

* Report of the Committee of Enquiry on Coke Quality: Part I—Sizing of Coke. *Trans. Inst. Gas Eng.*, 1942-43, 92, 36.

(*Continued on p. 529*)



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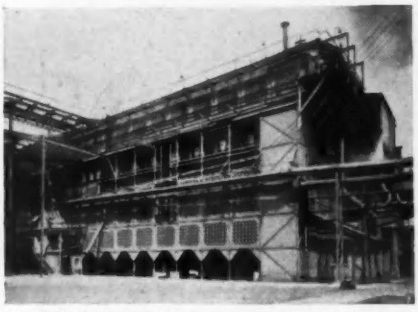
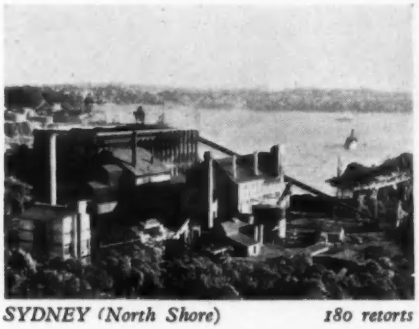


SYDNEY (Mortlake) *496 retorts*



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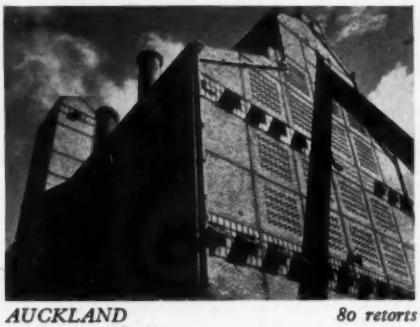
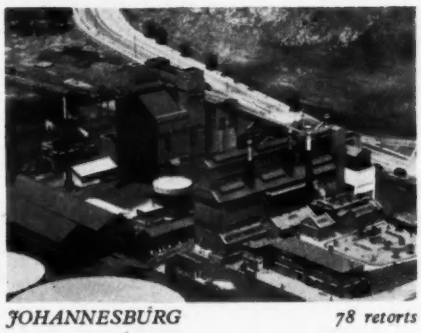
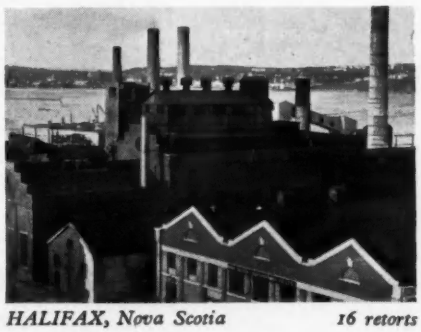


AUCKLAND *80 retorts*



JOHANNESBURG *78 retorts*

TORONTO *104 retorts*



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in 1951. On the other hand, should the output of steel remain at its 1951 level, there should be a surplus of 1.7 mill. ton of hard coke to be absorbed by the domestic and industrial users. From the evidence of the Gas Council to the Ridley Committee, it appears that, if the gas industry's own programme of expansion is carried out as planned, there will be a further 2.5 to 4 mill. tons per annum of gas coke for disposal. From a survey recently completed by the Coal Utilisation Council, it appears that the unsatisfied demand for solid fuel for domestic heating is approximately 4.5 mill. tons per annum. The satisfaction of this demand should be one objective of the coke marketing schemes that area boards have prepared, and which await the approval of Government Departments before being brought into operation.

Threat from Oil

The gas industry must also have regard to the threat of increased competition from the oil industry. At present oil provides 3.2% of the nation's coal-equivalent fuel consumption, but this may be increased to 5% when the new refineries are in full production. Gas and oil are readily substituted for each other in certain applications, and prices must be competitive if gas is to retain and increase sales. In fact, in all markets gas and coke are meeting with much keener competition, and it seems to many of us that we shall soon be in the same position as we were in the 1930s, but without the support of that great background of selling experience we then had at our disposal.

Our principal competitor, the electricity industry, is going rapidly ahead with its programme of expansion. It appears to have been more successful than the gas industry, both in obtaining allocations of capital and steel, and in keeping contractors to completion dates, for the plant completed in 1951 and 1952 had a total generating capacity slightly in excess of the installations planned for the two years. As a result, we noticed few power cuts last winter. Plans are now being made for a super-grid system to reinforce the existing network. A consideration of the prices of gas and electricity given in Table 4 reveals the severity of the competition that we must face.

TABLE 4.—*Capital Charges and Average Prices of Electricity and Gas.*

Year ended March 31	1949	1950	1951	1952
ELECTRICITY—				
Capital Charges	£46,459,614	£51,172,707	£56,495,566	£61,681,230
Capital Charges per Unit Sold	0.285d.	0.296d.	0.291d.	0.2936d.
Increase or Decrease Over Previous Year	—	+3.86%	−1.7%	+0.9%
Average Price per Unit Sold	1.18d.	1.20d.	1.18d.	1.22d.
GAS—				
Capital Charges	—	£16,559,236	£20,390,072	£22,560,017
Capital Charges per Therm Sold	—	1.865d.	1.989d.	2.155d.
Increase Over Previous Year	—	—	6.6%	8.3%
Average Selling Price per Therm	—	12.55d.	13d.	14.09d.
Increase Over Previous Year	—	—	3.6%	8.4%

Since its reorganisation, the gas industry has adopted the block tariff system of charge for gas, and in most areas the electricity industry now uses the same method. But, though the systems employed are the same, the method of application shows a vital difference. With gas, the reduction in price after the first block is usually of the order of 2d. to 3d. per therm, that is, 10 to 15%; with electricity, the reduction after the first block is much steeper; in some areas where the first block is at 4½d. per unit, the remainder is at ¾d. only. A modest consumption for lighting brings the electricity consumer on to the second block at this low rate, and, though the tariff may not be strictly justifiable on costs, it is certainly attractive and sales promotional. The electricity industry has the great advantage that it is usually considered essential to have electric lighting in all new houses. There is need for a domestic gas tariff that is really promotional, and sooner or later the industry will be obliged to formulate either a two-part tariff or a block tariff with a substantially reduced charge for the second block. Electricity at ¾d. per unit is for some domestic purposes competitive with gas at 18d. per therm. In such cases, the capital cost of an appliance, the cost of repair and maintenance, its performance, and the service offered with it will decide the issue.

Scope for Electricity

During 1952, the electricity industry experienced a slackening in the rate of increase in sales, but there is still great scope for expansion of the industrial and commercial loads. If the amount of electric power available to the British workman could be increased to correspond with that of his counterpart in the United States of America, British industry's competitive ability in the world markets would be vastly improved. This power could readily be made available without great capital expenditure by transferring to other fuels the domestic loads, other than lighting, now carried by electricity.

Reference to these domestic loads brings us to a consideration of our own peak-load problems. It is now widely accepted that, while peak-load gas can be very expensive to manufacture, when the extra cost of this relatively small volume of gas is spread over the cost of producing the total output, it is not a serious item. Nevertheless, a case can be made for charging more for peak-load gas, most of which is used for space heating. A convenient way of doing this would be to make all gas used throughout the year, excluding peak-load gas, subject to special block tariff discounts, and with the peak-load gas priced at ordinary block tariff rates without any special discount.

It is axiomatic that if any industry is ready to accept a particular load it should be prepared to develop it to the limit. The charges made for any particular service should be such that the same terms could operate without financial bolstering from other loads if the service were developed to the limit of practical demand.

Our friends in the electricity industry have found it necessary in the past to shed load during peak demand periods. It has been suggested that the gas industry should do the same, rather than provide plant to meet all demands, and that variation of specific gravity offers a ready means of effecting this.

I am sure, however, that the electricity industry plans to provide a 24 hour service as soon as it can, and is indeed well on the way towards doing this. It will strive to give the best possible service to the community. We, for our part, should be concerned not merely with the sale of gas and by-products, and of appliances for gas and coke utilisation, but, I am convinced, be prepared to provide a 24 hour heat service throughout each and every day of the year. Much of that priceless goodwill that the industry enjoys was built up on that policy, and only that policy will preserve it, and our industry.

The Future

If gas and coke are to maintain their competitive strength in the struggle that is developing in the fuel market, it is vitally necessary for the industry to find means of reducing the net cost of gas to the consumer. It should not be beyond the resources of the industry to reduce the cost of gas manufacture and distribution, improve the efficiency of utilisation, and produce cheaper appliances.

Production

In our time, the efficiency of gas production has been gradually raised by patient research and experiment, leading to the use of new materials (for example, silica refractories) and the introduction of new techniques such as the waste-heat recovery systems and improved insulation methods. Other means of improving efficiency are in the development stages; for example, the potential application of the gas turbine in the recovery of waste heat from carbonising plants, the possibilities of which were discussed by Captain Gregson at our 18th Autumn Research Meeting. There have been similar improvements in carburetted water gas plants, resulting in greater efficiency, with increased output from the plant and consequential reductions in operating and capital costs. There has, however, been no revolutionary change in the two principal methods of gas manufacture, and it is evident that such a change would be necessary materially to reduce the price of gas. Today, it can be claimed that the

thermal recovery of a modern carbonising plant is between 80 and 85%. While any improvement would be welcome, to raise this figure, say, from 85 to 86%, could not affect gas manufacturing costs to the extent that an increase from 30 to 31% in the efficiency of generation would reduce the cost of electricity.

We are in the position, however, where every possible source of economy, no matter how small, must be fully explored in the hope that the total effect of any savings made might make a worth while reduction in manufacturing costs. It has been shown, for example, how large-scale integration of works gives the engineer scope for working base-load plant to the best advantage by concentrating production at the most efficient plants, using the less efficient only for peak-load periods, but it may well be that all the possibilities of the many post-war schemes of integration have not yet been fully realised or exploited.

It has always been recognised that the selection of new production plant demands the most careful thought and study. Bearing in mind the growing difficulty of securing supplies of the coals most suitable for continuous vertical retorts, it is surprising to find the total daily capacity of vertical retort plant put on order since May 1, 1949, is in the ratio of five continuous vertical retorts to one intermittent vertical chamber oven, but I believe there is now a growing trend towards intermittent vertical chamber ovens.

Restriction of Plant Capacity

With capital charges at such a high rate, it is more than ever necessary to restrict plant capacity to the minimum, consistent with safety, and on this point opinion has changed since the pre-war years, when it was considered desirable to have a safety margin of 20 to 25% over the maximum day. It has now been accepted that, with modern plant and machinery, this margin can be reduced to a very low figure, of the order of 5 to 10%.

The industry is optimistic that the Lurgi process may contribute to the solution of some of our problems, particularly in the use of the non-caking coals. It is a large-scale process, and it remains to be seen whether flexibility in operation can be added to its other attributes of producing virtually sulphur-free gas, which is available for distribution at high pressure. Should the process prove technically successful, large-scale commercial operation will then depend upon the National Coal Board's readiness to assure a supply of suitable low grade coal at reasonable and stable prices. The acid test of any new process must be: 'Will it produce a cheaper therm?'

In the next two or three years, more should be known of the commercial possibilities of the processes for complete gasification and for the catalytic gasification of oil; it may be that we shall find it desirable to depend less on coal and more on oil as the raw material for our processes, but in the immediate future we must remain chiefly dependent upon carbonising plant of the orthodox types, with carburetted water gas for seasonal and peak loads. Refinery gas and coke oven gas will no doubt be available in increasing quantities in certain areas. The gas industry has taken supplies of coke oven gas in bulk for many years, and the volume available has been greatly augmented since the war by the replacement of inefficient and obsolete plant by modern compound ovens, releasing greater quantities of gas surplus to the ovens' requirements. In 1951, area boards purchased 66,400 mill. cu.ft., and it is estimated that 100,000 mill. cu.ft. will be available from this source by 1960. It would be desirable, in the national interest, for the gas industry to absorb this additional gas.

The financial factor cannot, however, be disregarded, and there is some divergence of opinion as to the price the gas industry should pay for coke oven gas. It must be remembered that the load factor for the production of this gas is practically 100%, while the gas industry has to provide the plant to meet peak-load demands. It has been shown over and over again that the cost of peak-load gas is many times higher than the cost of base-load gas.

The industry must also provide standby plant, and pay for the mains and equipment required to receive the coke oven gas. In addition to the cost of this plant, there must also be taken into account the cost of transporting coke to districts where the coke market must be protected. Further, the coke oven industry is not under any statutory obligations to gas consumers, such as those laid down in the Gas Act, 1948.

If the coke oven interests are prepared to supply at prices that make allowances for all these factors and give the gas industry a reasonable margin, there may still be a limit to the amount that can be economically purchased in any area. This limit will depend upon such factors as plant capacity, load curves and storage capacity. It would obviously be unsound to take coke oven gas in quantities that would necessitate the closing down of efficient and economical carbonising plant owned by the gas industry. On the other hand, it may be possible to construct long-distance transmission mains working at high pressures not hitherto employed in this country to distribute coke oven gas, and indeed refinery gas, to works perhaps 200 miles or more from the point of production.

There are diverse opinions regarding the ownership of coke oven plant supplying gas for town use. On this subject, all I have to say is that the coke oven plant at Hemsworth is in the joint ownership of the National Coal Board and the North Eastern Gas Board, on a 60 to 40 basis financially, but, happily, on a 50 to 50 basis for technical control. Though the arrangement has been in operation for less than two years, and it is perhaps early to judge results, it can be said that it has worked well to date, and the Gas Board does know that in the event of any emergency all its resources are immediately available to restore normal working.

In considering ways and means to a cheaper therm, we cannot escape the conclusion that production and distribution plant is too costly. It may be possible to reduce these costs, without sacrificing efficiency, by eliminating some of the refinements which, though desirable, cannot now be afforded. For example, it is suggested that it might be worth while to study whether it is necessary to house all plant in buildings. One often sees costly buildings housing plant that could, without any real detriment, be left in the open, or at least be adequately sheltered by an umbrella roof. While we may admire the lofty aims of the town and country planning authorities, we view with dismay the effects of some of their activities on the costs of new construction. One hears reports of serious delays and additional costs incurred in order to meet the requirements of these bodies. The nation as a whole is in no state to afford the luxury of these aids to our civic consciences; it is certain that the gas industry is quite unable to indulge them.

Effluent Disposal

The disposal of effluent may involve the industry in additional costs, but in some cases there is little or no justification for the increased charges demanded by sewage authorities. We therefore await with great interest the results of the research now being carried out at the University of Leeds and other places on behalf of the Gas Council. Fundamental problems are being tackled, the aim being to identify the individual constituents of ammonia effluents, and determine their effects on sewage disposal processes. It is, however, unlikely that the final results will be available for three or four years.

When those of us who are engaged in the day-to-day operation of the industry are seeking and striving to secure every possible economy in the cost of gas manufacture, it is unfortunate that the industry should be called upon to bear a substantial addition to its costs because of a coal shortage during the summer months of this year. The coal to be supplied during this period is 1 mill. tons less than the industry's estimated requirements, and the additional cost of producing the correspondingly increased volume of carburetted water gas may well amount to £750,000. However, despite this setback, we shall press forward determined still to secure the highest efficiency in our process and the utmost economy under the prevailing conditions.

Distribution costs must also come under review. The provision of gasholder storage is one costly item that should be carefully considered in relation to the type of load and the production plant available. Storage capacity equivalent to 16 hours at maximum demand is nowadays considered ample for works relying solely on carbonisation, with 12 hours in other cases. Consideration might also be given to the use of new materials in the manufacture of gas piping. Synthetic substances may prove to be cheaper, and no less suitable than the traditional materials.

Consumer Service Essential

Consumer service is essential, but it must be efficient and economical. From time to time disturbing reports are received of some of the costly methods employed in giving this service. It is, therefore, suggested that the whole organisation of consumer service in its widest sense, and covering all operations in connection with meters and appliances, should be subjected to the most careful scrutiny in an attempt substantially to reduce costs without impairing the service.

Any economies that may be derived from these sources will be most welcome, and well worth seeking, but in total they may or may not provide a major contribution to that cheaper therm which the industry needs to continue the expansion of sales recorded in the post-war years. We must therefore turn to the field of utilisation. Can we reduce the net cost to the consumer by stepping up efficiency of utilisation?

Utilisation

Significant progress has been made in domestic utilisation of gas, and in fact the modern gas cooker retains its popularity as the nation's most efficient and economical kitchen appliance. The efficiency of modern gas cookers has increased to such an extent that gas consumption has been reduced by 40% compared with the cooker of 20 or 30 years ago. There is scope for a large expansion of the domestic water heating and space heating loads. The recent reduction in purchase tax on appliances was most welcome, but there is a need for the complete removal of the tax on the appliances used to meet these loads. These appliances are not luxuries—they are necessities. In the case of water heaters there is need for simplification in design to reduce initial cost, and the development of metal alloys more resistant to the corrosive action of combustion products, which would help to reduce maintenance charges. Improvements have already been made in space heater design: the efficiency of the new convector gas fire is 60 to 65%, and I believe appliances are in the course of development which will give an even higher efficiency. It is suggested that with many appliances the cost might be reduced if, without sacrificing efficiency performance, they were designed to give a slightly lower standard of durability.

There has been much progress in improving the efficient utilisation of gas in many industrial and commercial applications. For example, in a gas-fired cremator of recent design the gas consumption is 70% less than in the older types; a re-designed burner system for glass tank feeders reduced gas consumption by 15%; the modification of a cocoa bean roasting plant cut gas consumption by 30%. Many other similar examples could be given, but, even so, there is tremendous scope for raising the efficiency in these fields. Savings of this nature, equivalent to substantial reductions in the price of gas, are a most valuable advertisement of the virtues of gas as a fuel for industrial and commercial uses, making an important contribution to that expansion of gas sales which is necessary as a counter to the rising cost of capital, labour and materials.

At this stage I would pay tribute to the manufacturers of plant and appliances. Over the years, they have progressed and developed their wares to a high state of modernity and efficiency, and they have contributed in no small measure to the success of the gas industry. They are now confronted with a buyers' market, and must of necessity adapt themselves to these changed conditions. In particular, they must have the greatest regard for the highly competitive markets in which the gas industry must sell its products. I am sure we can rely on the manufacturers to control their organisations, with a view to the production of goods of the quality and at prices that will meet the requirements of this new phase in the history of our industry.

Summary

Before I conclude, may I reiterate briefly the points I have tried to make in my review of the present state of our industry and the steps that should be taken now to meet the threat of severe competition from other fuels.

If the prices of carbonisation coals cannot be reduced, at least they should be stabilised, to give the industry confidence and encouragement to plan for cheaper manufacturing plant, with higher yields per ton of coal. Priority for capital and steel should now be given to new coke preparation plants.

Distribution engineers could profitably investigate the use of new and cheaper materials, while an enquiry into the organisation of consumer services might well reveal methods of reducing costs without impairing the services.

Though these steps could effect some economies in the cost of gas manufacture and distribution, it is by raising the efficiency of utilisation of gas that we shall succeed in materially reducing the net cost of gas to the consumer. The removal of the tax on gas appliances is the first necessity. Another is the production of cheaper, though possibly less durable, appliances for the domestic consumer. Improvements in the design of industrial and commercial gas equipment are required to give higher efficiencies; and it is suggested that here are fields for fruitful investigation.

Above all, gas tariffs that are really sales promotional are indispensable if the industry is to secure that vital increase in the annual rate of expansion of gas sales.

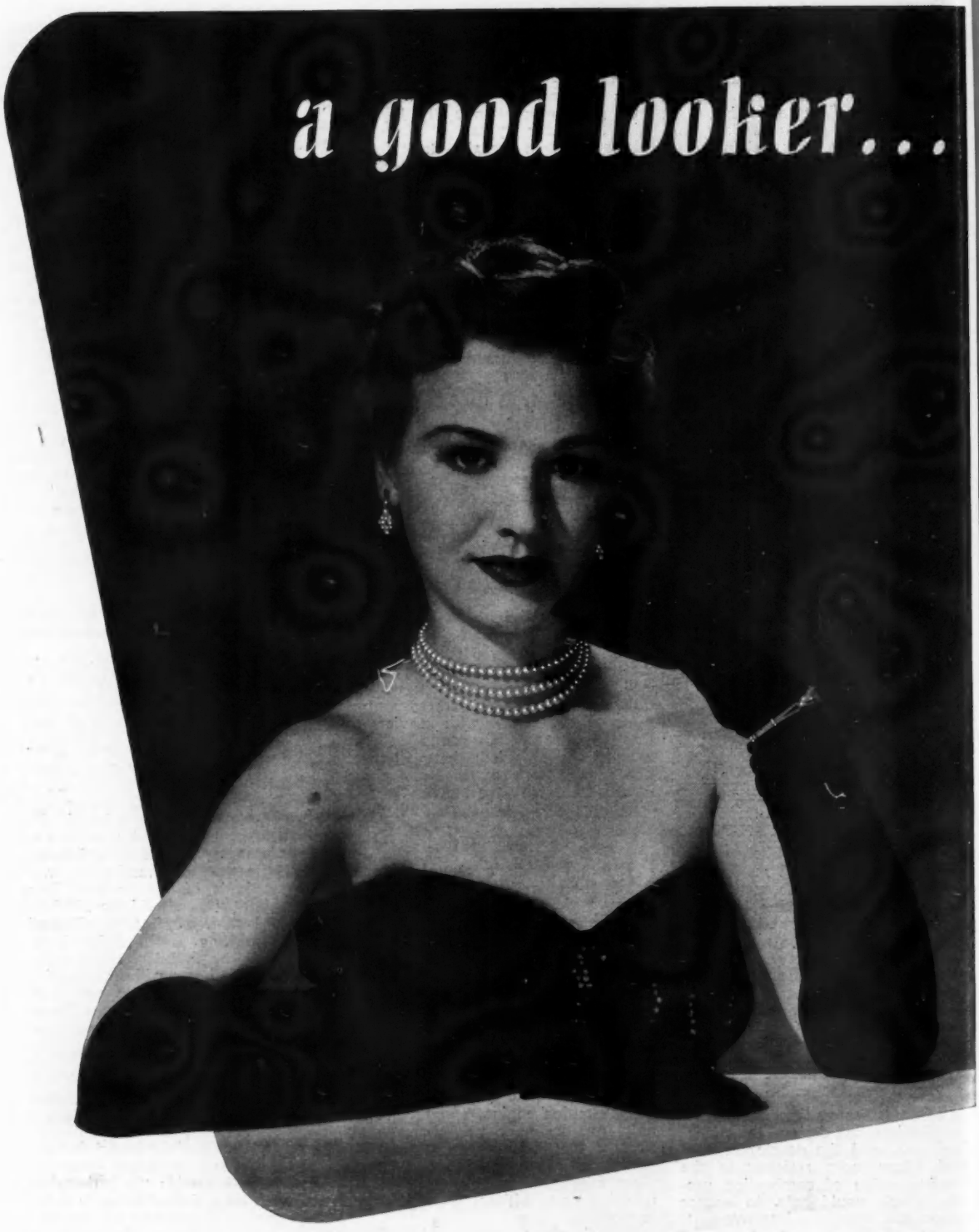
Conclusion

I pay tribute to the excellent manner in which Dr. Braunholtz and his staff organise and administer the affairs of the Institution. Their varied tasks are carried out with such modesty that only those who have held office can realise how efficiently they are performed. I always find it a pleasure to enter the calm atmosphere of No. 17, Grosvenor Crescent, and meet the Secretary and his team. I am delighted to have this opportunity of expressing my appreciation, and would like to place on record my sincere thanks for all they have so cheerfully and readily done for me during the last year.

My thanks are also due to the members of the Council, and particularly to the two Vice-Presidents, Mr. Haynes and Mr. Tate, for their loyal support and readiness to respond to any request for assistance, large or small.

In a short time I must relinquish this office, which I was privileged to take over from my good friend Mr. Dyde 12 months ago. As I hand over my duties to Mr. Haynes, I would wish him the same happiness in his presidential year that I have enjoyed in mine. He has ahead of him much hard work, and maybe some disappointments, but he will find that this is tempered by many new and pleasant experiences which will make the next 12 months the most memorable in his career, and I am sure that at the end of it he will have a record of achievement. Though he takes office at a critical time in the history of the industry, I know that he and the industry will draw inspiration from the Coronation, and dedication to service, of our young Queen, Elizabeth the Second. We may not again see 'the spacious times of Great Elizabeth,' but we do hope to see in the industry more of that spirit of adventure which sent the seamen and merchants of Elizabeth Tudor's England fearlessly into the unknown world in search of fame and fortune.

I have talked at length, and, as Thomas Carlyle said: 'Talk that does not end in any kind of action is better suppressed.' I trust that my remarks will produce action, as the fulfilment of our hopes for the industry, and the nation, must depend largely upon our own efforts. Borrowing the words of that great Elizabethan, William Shakespeare, I would urge all of us to 'Stiffen the sinews, summon up the blood, disguise fair nature with hard-favoured rage,' and hurl ourselves into the battle 'For Gas.'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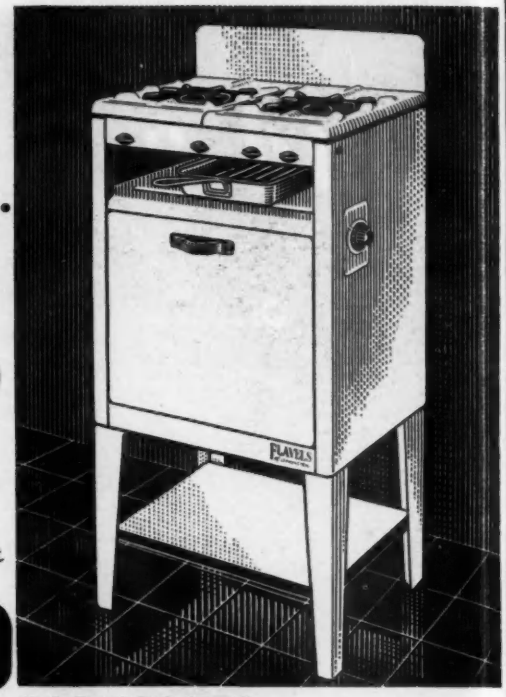

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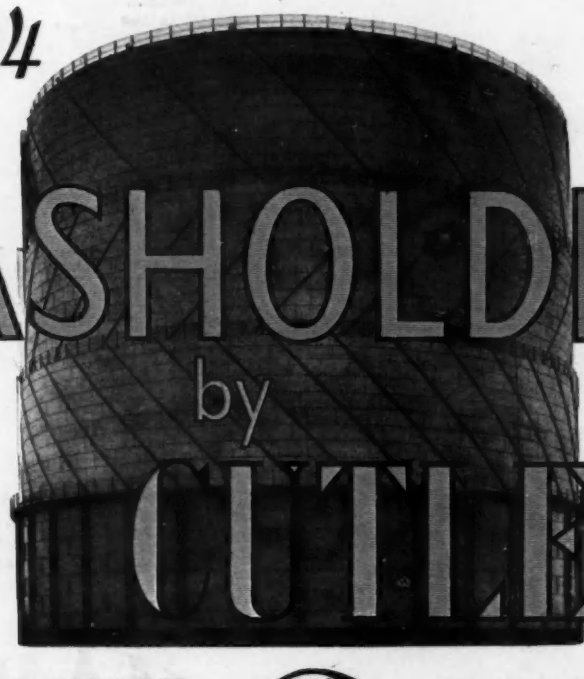

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Personal

MR. ALONZO LIMB, Managing Director, has been elected to the additional post of Deputy Chairman of C. C. Wakefield & Co., Ltd. Mr. L. W. FARROW, C.B.E., is the company's Chairman.

MR. W. A. LLOYD-DODD, who contributed to the discussion at the B.I.F. Industrial Gas Conference reported in last week's *Journal* (pp. 424-425) is Industrial Sales Manager, Newcastle Division, Northern Gas Board, and representative of the Board on the Industrial Gas Development Committee of the Gas Council, and not, as reported, an official of the North Western Board.

DR. ALEXANDER FLECK, a Deputy Chairman of Imperial Chemical Industries, has been elected Chairman, with effect from July 1. He will succeed Mr. JOHN ROGERS, who intends to resign from the Board at the end of June. Dr. Fleck has been associated with the company and its predecessors since 1917. He was appointed to the I.C.I. Board in 1944 and elected a Deputy Chairman in 1950. From 1937 till 1945 he was Chairman of the Billingham Division.

MR. W. HAWKINS has retired after 33 years' service with Spencer-Bonecourt, Ltd. Mr. Hawkins, who is well known throughout the gas and steel industries, held the position of Chief Erection and Service Engineer. The directors have appointed Mr. B. D. Clark to succeed Mr. Hawkins.

MR. C. M. D. BELTON, Divisional General Manager of the Shropshire Division, West Midlands Gas Board, will retire at the end of June after over 43 years' service. A native of Wellington, Shropshire, Mr. Belton went to Shrewsbury in 1910, and seven years later he was appointed Engineer, Manager, and Secretary of the Shrewsbury Gas Light Company. He was elected to the Board in March, 1939, and on the nationalisation of the industry in 1949 he was appointed to his present position of Divisional General Manager. He was President of the Midland Association of Gas Engineers and Managers in 1929, and he has taken an active part in the affairs of the organisations which were eventually absorbed by the Gas Council. Latterly he has been a member of the Area Joint Industrial Council for the Gas Industry. He will be succeeded at Shrewsbury by MR. W. OLDHAM, Manager of the Barrow-in-Furness Group of the North Western Gas Board.

Women's Gas Federation. — The annual general meeting of the Women's Gas Federation will be held on June 9, at 3 p.m. at Caxton Hall, Westminster, S.W.1. Miss K. M. Halpin, O.B.E., President of the Federation, will be in the chair, and speakers will include Geoffrey Lloyd, M.P., Minister of Fuel and Power; Colonel Sir Harold C. Smith, K.B.E., Chairman of the Gas Council; and Dame Enid Lyons, G.B.E., the first woman to hold Cabinet rank in the Australian Federal Parliament.

Letter to the Editor

ADVERTISING OF CONTRACTS

DEAR SIR,—Your correspondent 'Purifan,' has raised a very important matter in your issue of April 29 concerning as he so admirably expresses it, 'the abandonment of the old practice of advertising contracts for any new gasworks plant in the technical journals.'

When contracts were advertised, one felt one had, at any rate, an equal chance with other firms, and it was the opinion of many that after nationalisation, all contracts would be advertised without exception, instead of which only the favoured few are allowed to know of any proposed work, or to submit a tender.

This is a state of affairs which could, and should, be remedied without delay, resulting in a fair opportunity for all manufacturers, and an almost certain lowering of prices.—Yours faithfully,

AEQUITAS.

May 21, 1953.

Wartime Tank Driver Wins Maintenance Competition

A FORMER tank driver of the 1st Army won the North Western Gas Board's award for the driver of the best-maintained vehicle in the greater Manchester area in the final round of the Manchester Group's annual vehicle inspection at Gaythorn works on May 15.

He is George Cartledge, 30, a gasfitter at the Stretford undertaking, whose 5-cwt. Ford van was judged by the Chairman of the Board, Mr. D. P. Welman, to be the best of the 160 vehicles taking part in the contest. Cartledge has been with the Board for 14 years and has 10 years' driving experience. He served as a driver with the Royal Tank Regiment in the Western Desert during the second world war.

The drivers and their vehicles taking part were drawn from the Manchester, Salford, Stretford, Altrincham, and Wilmslow undertakings. After inspection in three heats by technical experts of the Morris, Ford, and Commer motor companies, nine competitors went into the final round for Mr. Welman's assessment.

We have received a copy of the first issue of *Stott Press*, a new house organ which is to be published quarterly by James Stott & Co. (Engineers), Ltd., Oldham. The intention is to circulate the journal quite widely and to organise its editorial content to appeal not only to customers and prospective customers, but also to agents, supply authorities, and to acquaint the company's own employees with its general marketing and development policies. In an introductory note Mr. R. E. Stott, Managing Director, says the foundations of the present company were laid in the 1870's, with concentration at first on the manufacture of gas governors and later on lighting installations, heating, and ventilation. Stotts were firmly established in the manufacture of catering equipment before the first world war, and complete installations are now in use in hotels, hospitals and other establishments throughout the world.

Diary

May 27.—SOUTH WESTERN SECTION, I.G.E.: 'Some Attempts Made to Reduce the Cost of Gas Production,' J. E. Wilkes and J. A. Bell. Taunton.

May 28.—EAST MIDLANDS SALES AND SERVICE CIRCLE (Sheffield and Rotherham Division): Visit to Rainhill Works of Stoves, Ltd.

May 28.—NORTH THAMES G.C.C.: Westminster City Hall, Charing Cross Road, W.C.2, 2.30 p.m.

May 29.—SCOTTISH JUNIORS: Joint Visit to Whessoe, Ltd., and to the new factory of Paton & Baldwins, Ltd., Darlington.

May 29.—LONDON JUNIORS: Annual General Meeting, Lecture Theatre, 178/180, Edgware Road, W.2, 6.30 p.m.

May 30.—WESTERN JUNIORS: Visit to Stapleton Road Works. 'Fluids Handling on Gasworks,' J. Parker. Bristol.

June 6.—SCOTTISH (EASTERN) JUNIORS: Annual Outing. Galashiels.

June 6.—SCOTTISH (WESTERN) JUNIORS: Ladies' Day: Visit to Loch Katrine and Royal Lodge.

June 8.—SOUTH EASTERN G.C.C.: Caxton Hall, Caxton Street, Westminster, S.W.1, 2.15 p.m.

June 8.—NATIONAL AND LOCAL GOVERNMENT OFFICERS' ASSOCIATION (Nalgo): Meeting of Gas Staffs, Llandudno,

June 9.—WOMEN'S GAS FEDERATION: Annual General Meeting, Caxton Hall, Westminster, S.W.1., 3 p.m.

June 9-12.—NATIONAL AND LOCAL GOVERNMENT OFFICERS' ASSOCIATION (Nalgo): Conference, Pier Pavilion, Llandudno.

June 10.—SOUTHERN G.C.C.: Bournemouth, 11 a.m.

June 10.—SOUTH WESTERN GAS CONSULTATIVE COUNCIL: Meeting, 34, Bridge Street, Taunton, 11 a.m.

June 11.—MIDLAND JUNIORS: Ladies' Day, Hereford.

June 15-16.—EASTERN SECTION, I.G.E.: Annual General Meeting, Royal Hotel, Clacton. Chairman's Address, F. A. Rhead; business meeting; 'The Case for the Deep Purifier,' R. Whiting, Divisional Engineer, Ipswich.

June 17.—LONDON AND SOUTHERN SECTION, I.G.E.: Summer Meeting, Brighton.

June 20.—MANCHESTER JUNIORS: Ladies' Day at Windermere. Bus ride to Langdales or visit to Gasworks optional.

June 20.—LONDON JUNIORS: Ladies' Day and Summer Visit to Cambridge.

June 20.—WALES JUNIORS: Summer Meeting and Ladies' Day: Visit to Whitland butane/air gas plant, followed by lunch, Royal Gate House Hotel, Tenby.

June 25.—NORTH THAMES G.C.C.: Caxton Hall, S.W.1.

June 27.—WESTERN JUNIORS: Summer Meeting and Ladies Day.

GAS SERVICE IN A NEW HEALTH CENTRE

WOODBERRY DOWN

THE LONDON COUNTY COUNCIL has recently opened a new Health Centre on the Woodberry Down Housing Estate, Stoke Newington. The centre is a comprehensive one, covering a general medical and dental practitioners' unit, a school health unit, a child welfare unit, an ante-natal unit, and a remedial exercise and child guidance unit.

The site of the centre covers about one-and-a-half acres, including one-third of an acre for a day nursery which is quite separate from the Health Centre, although the engineering services are shared. The space available was therefore sufficient to allow the building to be confined to two floors, obviating the necessity for lifts. Allocation of the different services to the ground floor was governed by the special needs of the various types of patient.

One end of the lecture hall, showing the demonstration kitchen, where cookery lectures can be illustrated by the use of the New World No. 1840 cooker.

Six separate suites, all located on the ground floor, are provided for the use of the general medical practitioners. Each suite comprises a waiting room to accommodate about 20 patients, a consulting room, and an examination room. Sleeping accommodation and a bathroom for the doctor on night duty are on the first floor, where there is also an attractive dining/common-room for the doctors. The adjacent kitchen has a New World Chester range No. 237 and a Palatine hot closet.

The staff has its own common rooms, one of which has a small kitchen attached, where meals can be cooked on the New World No. 1840 gas cooker.

Meals may also be obtained by the staff working at the centre in a large restaurant which, with its pastel pink walls, pale blue paintwork, and contrasting primrose painted radiators is a cheerful and inviting room. Curtains are patterned in fawn, rust and yellow, and the chair cushions are of rust coloured material. Patients can purchase light refreshments here, if they wish.

The restaurant kitchen is equipped with a New World 417 Chester range, Belgravia Minor hot closet and a Savoy griller.

The welfare of expectant mothers and children has been given careful attention, one of the amenities being a large hall which, although being available for general use of the centre as required, is especially well equipped for talks and demonstrations on mothercraft. Suitable films can be shown with the cinema projector which is provided, and practical demonstrations on the preparation of meals for infants and children given on the New World 1840 cooker which is fitted in the complete demonstration kitchen at one end of the hall.

Mothers who have to work and leave their children all day are appreciative of the day nursery, where youngsters, from babies of six weeks old to toddlers up to five years, have expert attention including regular medical examinations. Investigation is, of course, made to ensure that the circumstances in each case make it necessary for the children to be left in a nursery.

The children can be left daily from 7.45 a.m. until 5.45 p.m. During this time, they are under the care of the matron and her staff and play happily in the pleasant, airy rooms which, like the rest of the Woodberry Down Health Centre, are decorated in imaginative colour schemes, and equipped with contemporary design utility furniture. When the weather permits, encouragement is given to them to play out of doors.

The furniture in the day nursery is all of small-scale for the comfort of the children, who also have miniature washbasins and lavatories. Each child has its own washing materials and is taught to keep these in the special place assigned for them.

A moderate charge is made for accommodation in the day nursery, including three daily meals of breakfast, lunch and tea, which are cooked on the 347 Chester range with which the kitchen is equipped.

The Health Centre employs a resi-

(*Continued on p. 539*)

A New World 417 Chester range, Belgravia Minor hot closet, and a Savoy griller, have been installed in the kitchen attached to the staff restaurant.

E·R

LOYAL GREETINGS TO HER MOST GRACIOUS MAJESTY

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"SERVICE TO THE PEOPLE THROUGH NINE REIGNS"

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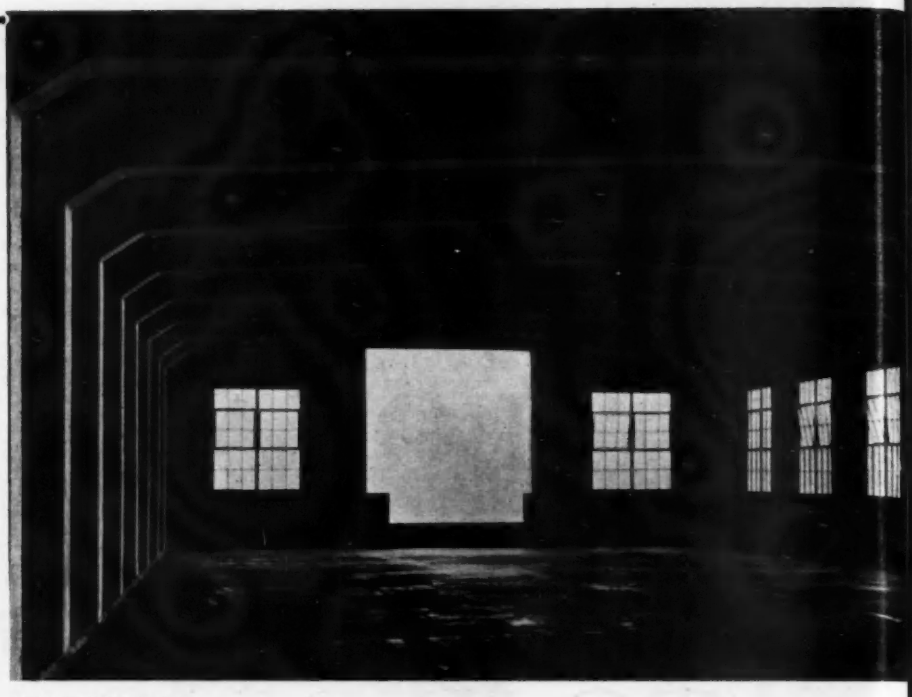

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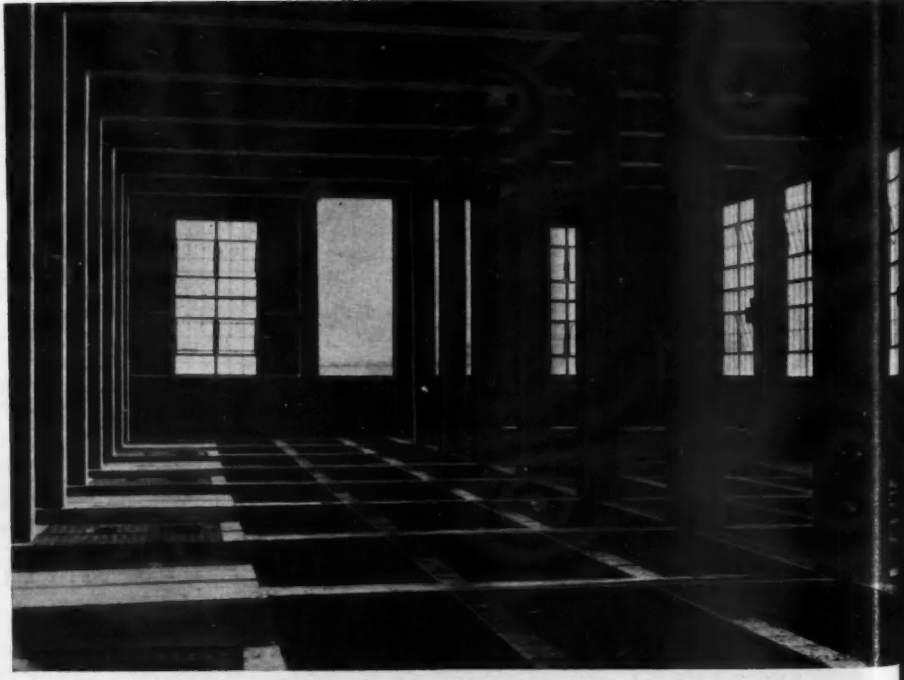


F. C. CONSTRUCTION CO. LTD.

CITY ROAD, DERBY

dent caretaker who has a flat over the first floor of the building. Here another 1840 cooker has been fitted in the kitchen by Fretwell Heating Co., Ltd., who were the sub-contractors responsible for mechanical engineering, to the design of the Chief Engineer, London County Council, and who installed the other cooking appliances at the centre.

A maximum population of 21,000 can be served in the general practitioners' section, while each of the six doctors is permitted a panel of 3,500 persons. In the public health sections of the building, it is estimated that a population of 25,000 can be served.

The centre illustrates, in the most practical way, the modern idea that such establishments can have character, breaking away entirely from impersonal and too-clinical surroundings; patients cannot fail to be impressed with the atmosphere of smooth efficiency and cheered by the gay colours used in the decorations. And as has been shown, it was to gas that the designers turned when selecting cooking equipment for this most modern and attractive building —yet another compliment to Mr. Therm.

Short Weight Coke

THE South Western Gas Board, which pleaded guilty, was fined £5 and ordered to pay £2 7s. 2d. costs and an advocate's fee of two guineas at Falmouth on Thursday, May 7, for having for sale coke which was under weight. It was stated that the case was the first ever to be brought against the Board.

Prosecuting for the Cornwall County Council Mr. J. D. Murray said a lorry which had been loaded at Penryn gasworks had on it a ton of large coke for the village club at Flushing. A weights and measures inspector who tested the sacks found that one was 31 lb. overweight, another 36 lb. underweight, and that there was a total deficiency on the ton of about 2¼ cwt., valued at about 18s. 2d.

For the Board, Mr. O. F. Price said he had been asked to express regret that such a case, the facts in which were not disputed by them, should come before the court. The matter arose from the negligence of an employee who had admitted it and had been discharged. Unfortunately, the South Western Gas Board, like any other trading concern, was liable to become involved in such proceedings through no fault of its own, but through that of an employee.

The sub-divisional accountant, at Truro, Mr. I. F. Griggs, said the Board's employee whose duty it was to weigh the coke apparently weighed only one or two sacks. He was a casual worker who had, in fact, given in his notice the previous Saturday, and he had been summarily discharged. When Mr. Murray asked why the Board had not considered charging the employee, as it had a right to do, Mr. Griggs said that that was not within his scope to say.

The presiding magistrate said the Bench realised that the Board took reasonable precautions, but had been let down by an employee.

A Straw in the Wind

Price Problems in the East Midlands

THE East Midlands Gas Consultative Council, meeting at Nottingham on May 5, heard a lengthy memorandum by Councillor G. H. Clarke (Wolverton) drawing attention to the 'inferior service' obtained from the Wolverton gasworks and the long drawn out negotiations for its purchase by the East Midlands Gas Board. Councillor Clarke pointed out that the Wolverton works was one of the undertakings that did not vest in a gas board under the Gas Act, 1948, and was still administered by the Railway Executive of British Railways and catered for a population of some 9,000.

A 'straw in the wind' was that the local people were changing to electricity and out of 20 tenants on a new housing estate at Stacey Hill, 13 chose electrical apparatus.

Purchase Negotiations

The 1950-51 report of the Board stated 'negotiations are in progress with the British Transport Commission for the purchase of the Wolverton gas undertaking.' Nothing further had been divulged and Councillor Clarke said enquiry evoked the answer that no progress had been made because of a deadlock on the price being asked.

Despite a feeling by members that the matter should be approached at ministerial level, the Council decided to request the Board to submit a report on the negotiations to date with the Commission in order that the Council might ascertain whether the negotiations had failed, or were in abeyance. The report, to save time, will be considered by the Council's special purposes committee who will take whatever action is deemed necessary.

A letter from the Ministry of Fuel and Power stated that the Federation of British Industries had represented to the Minister that the existing constitution and organisation of the electricity and gas consultative councils gave inadequate representation to the interests of industrial consumers. It pointed out that the industrial representatives were in a minority and it felt that other members of the Council were not directly interested in or competent to deal with problems of industrial supply.

Alderman C. R. Bates (Chairman) said he had replied saying he could not agree, so far as this Council was concerned. Several members were either industrial or commercial consumers and were interested and competent to deal with problems of industrial supply. Furthermore, this Council had already appointed an industrial gas committee.

Price Comparisons

Figures produced at the request of Mr. F. A. Heron (Leicester) showed that although the East Midlands Gas Board decided to increase its charges after the recent rise in the price of coal, seven other area boards had not, and five had smaller reserves.

It was shown that the East Midlands Board in 1951-52 made a profit of £273,980 and had reserves of £723,060. The 5% tariff increase was estimated to bring in an additional £580,278. In Scotland, where no increase had been made, the figures were £34,944 and £31,475. A similar increase there would have brought in £574,596.

In other areas where prices were not increased the profit for the year ended March 31, 1952, and the published reserves were: North Thames, £186,097 and £2,442,385; Southern, £131,063 and £191,748; Northern, £32,044 and £360,074; South Western, £286,707 and £25,866; Eastern, £289,688 and £197,484; South Eastern, £330,119 and £1,234,944. In Wales and West Midlands no decision had yet been made. Others who had increased tariffs were North Western and North Eastern.

Mr. Heron commented that the figures were 'rather staggering,' but too late.

Alderman Bates pointed out that there was no guarantee that the areas which had not increased prices would not do so in the future.

A Grimsby Grievance

The Council was told that a Grimsby firm felt that gas consumers in the town were penalised in having to pay such a high charge compared with consumers in Scunthorpe. The Council was considering the opinion of Scribbans-Kemp (Eastern), Ltd., as expressed in a letter to Mr. J. F. Morrissey, a Grimsby member on the Council's Lincolnshire divisional committee. The company, the letter said, consumed about 400,000 therms a year, costing £21,400 under revised tariffs; but if the factory were in Scunthorpe the cost would be only £15,740, a difference of £5,660.

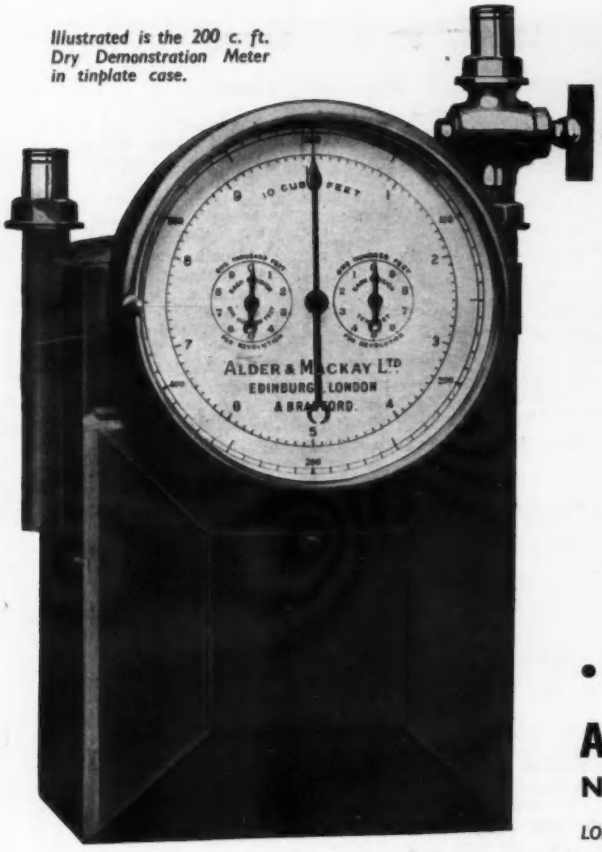
The firm was of the opinion that consumers in Grimsby were helping to pay for a number of small and relatively inefficient undertakings within the Lincoln and Grimsby zone, and considered the equalisation of tariffs should have been carried out throughout the area and not by zones within the area.

A letter from the Gas Board stated that the basic principle underlying the policy of fixing the price of gas in zones was that, broadly, the price should reflect the cost of production in the area. If Scunthorpe were included with Lincoln and Grimsby the price of gas there would not bear a true relation to the cost of supply. The overall effect on the price of gas in the Lincoln and Grimsby zone would be small.

The Ridley Committee, the Board's letter added, had said it could not support demands made that gas prices should be uniform throughout the Board's area.

Wales Gas Board was expected to have a small surplus on last year's trading, it was stated at a meeting of Wales Gsa Consultative Council at Llandrindod Wells. Mr. David Jones (Secretary) said gas sent out last year increased 3% over the previous year. Distribution improvement schemes involving mains laying at an estimated cost of £107,000 had been authorised. The Board had authorised during the year the laying of mains and services on 157 new housing estates comprising 12,731 houses at an estimated cost of £323,000.

Illustrated is the 200 c. ft. Dry Demonstration Meter in tinplate case.



IMPORTANT MEASURES

The 'A & M' DRY DEMONSTRATION METER

This meter is particularly useful for cookery or other demonstration purposes. The dial is 9" in diameter, and the meter is available in a variety of sizes. Complete details will be sent on request.

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Displayed Advertisements: Rates obtainable on application to the Business Manager. Change of copy for displayed spaces must be received 14 days prior to publication if proofs are required. Type area of inside pages 10" deep x 7" wide; block screen 120.

BUSINESS MANAGER: S. T. CULLEN

MIDLANDS OFFICE: 10, Union Street, Birmingham.

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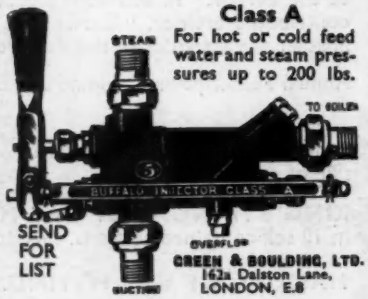

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APPOINTMENTS VACANT

The engagement of persons answering these advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive or a woman aged 18-59 inclusive unless he or she, or the employment, is excepted from the provisions of the Notification of Vacancies Order, 1952.

SCOTTISH GAS BOARD

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GOLSPIE DISTRICT

APPLICATIONS for the position of DISTRICT MANAGER at the above Undertaking are invited from persons with adequate practical experience in distribution and sales and in the operation and control of a small Gas Works.

The salary for the post is Intermediate Grade VI Provincial 'B' (£435-£480). A house free of rent and rates is provided, together with free fuel and light.

Applications stating age, present position and experience, together with references, should be submitted to the undersigned within fifteen days of the appearance of this advertisement.

H. S. MILNE,
Divisional Controller.

50, Cotton Street,
Aberdeen.
May 18, 1953.

NORTH WESTERN GAS BOARD

FYLDE GROUP
INSTALLATIONS OFFICER—
BLACKPOOL DISTRICT

APPLICATIONS are invited for the above pensionable position at a salary within Grade A.P.T. X (£665-£765 per annum).

The successful applicant will be responsible under the Group Sales and Service Officer for the organisation and control of Fittings and Maintenance Staffs and workshop personnel and the supervisory personnel engaged upon the installation of appliances and meters.

Candidates should hold a qualification in Gas Engineering (Supply) and have had good experience in the duties required.

Detailed applications, giving the names of TWO referees, should reach the General Manager, North Western Gas Board (Fylde Group), Princess Street, Blackpool, within fourteen days.

WALES GAS BOARD

BARMOUTH UNDERTAKING.

APPLICATIONS are invited for the position of MANAGER of the above Undertaking within t Salary Grade A.P.T. VI.B. (£475/555 per annu inclusive of emoluments—a house will be available.)

Applicants should possess sound experience in p manufacture and distribution and should be capable carrying out successfully the administrative and oth duties of the post.

The successful applicant will be required to pas medical examination and to join the Board's Supe annuation Scheme.

Applications, giving age, qualifications, pres position and experience, together with the names two referees, should reach the undersigned not la than June 6, 1953.

C. B. MAWER,
Secretary.

1/2, Windsor Place,
Cardiff.

MISCELLANEOUS

PRACTICAL ECONOMY

THESE DAYS, a sound investment is somethi to write home about. What we write of here not a new discovery, for it has long been at the dispo of industry. The point is that only the alert are un it to their full advantage. We refer to the help afford to administration by a FULL PHOTOGRAPHI RECORD of constructional jobs from foundation completed building, from rough casting .o finish product. Nothing escapes the eye of the came No other recorder covers such a wide field. A pr gressive file of photographs taken at regular, specif intervals, is an ever-present aid to the busy executiv It can be referred to at once in case of any point wh may arise during the construction of plant or the maki of a product. It shows progress at a glance unmista ably and eliminates the cause of wrangling and argume

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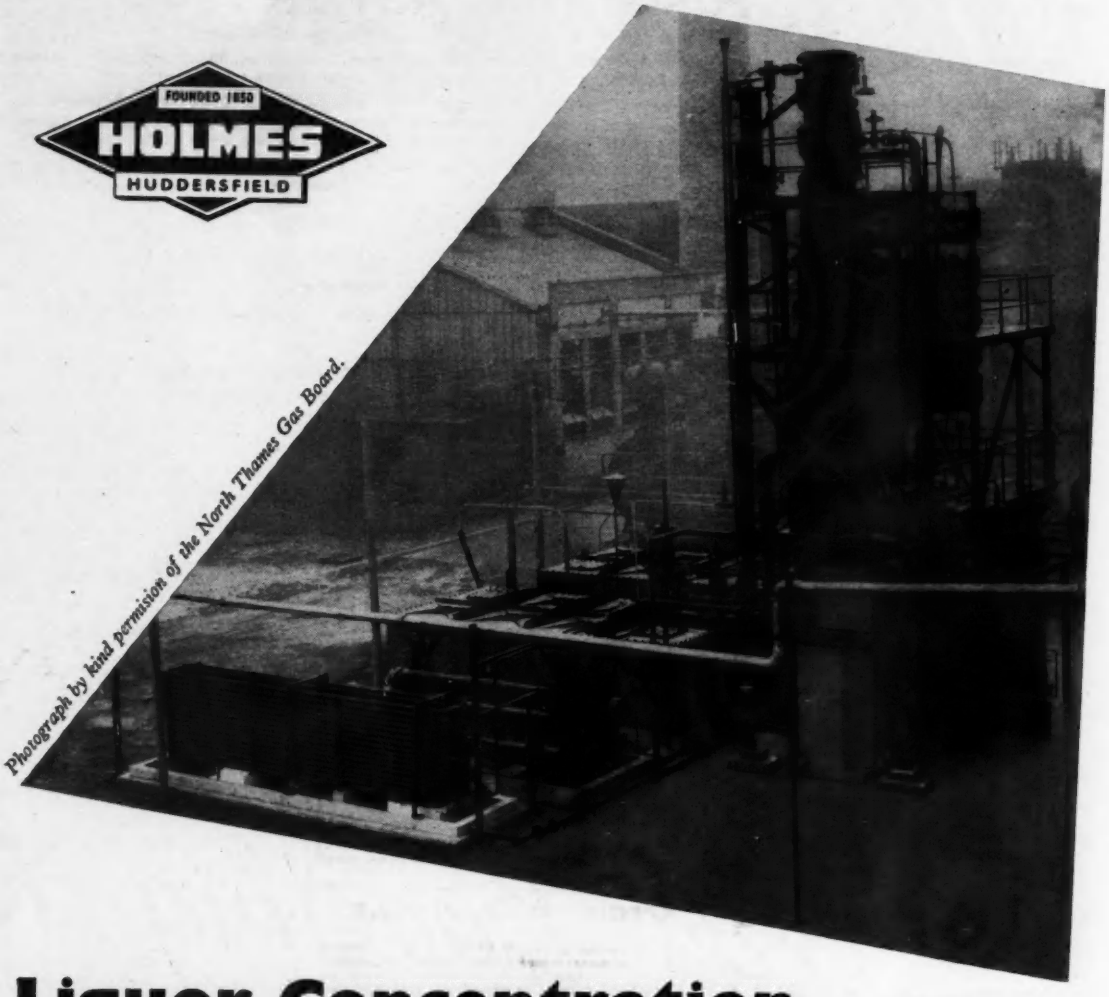

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Complete by-product recovery plant for the Gas Industry

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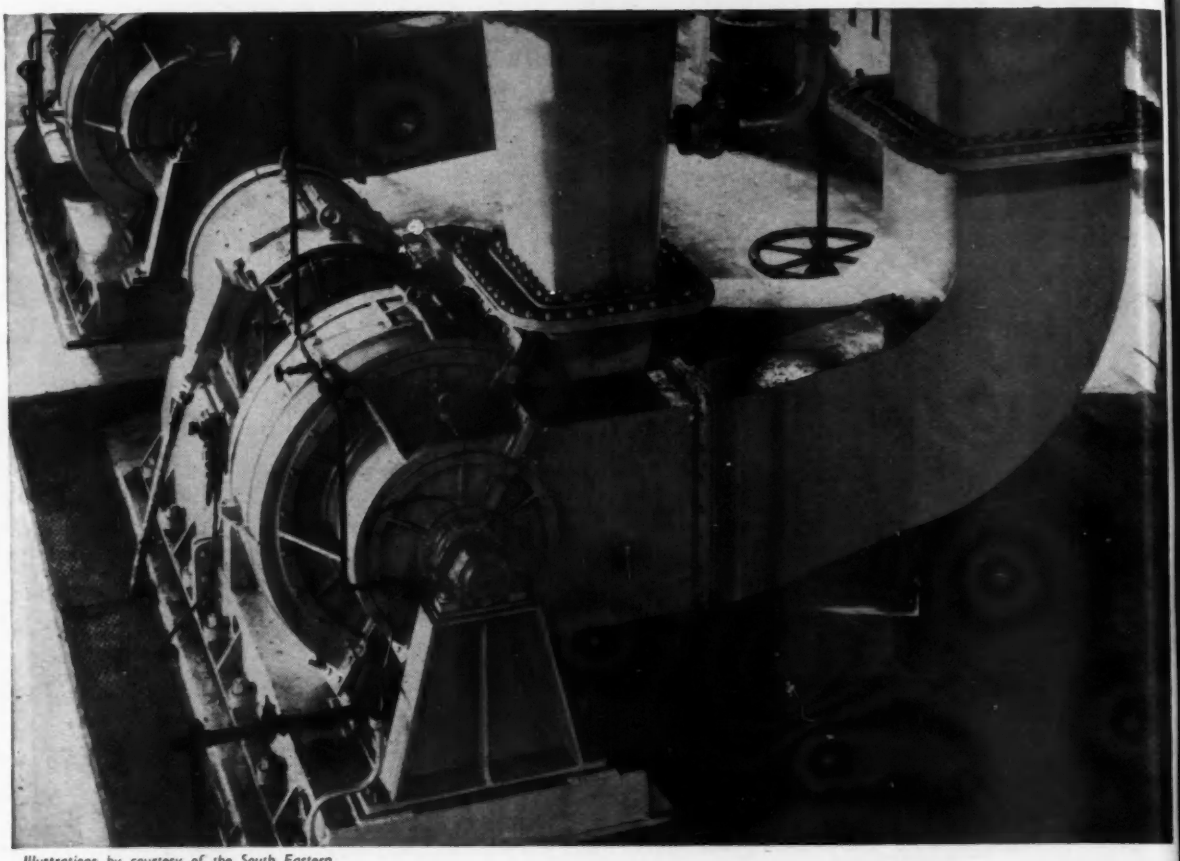

Illustrations by courtesy of the South Eastern Gas Board and Messrs. Humphreys & Glasgow Ltd.

Gas Boosting *

Part of an installation at the East Greenwich Gas Works for the supply of South London's gas are the "TORNADO" gas boosters illustrated above. Each is capable of shifting over a million cubic feet of producer gas an hour, and each was supplied with cast iron gas tight casings with detachable segments for easy servicing, stainless steel impeller and shaft, self aligning roller bearings and flexible couplings. One of the boosters was arranged for motor drive and the other for steam turbine.

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We are manufacturing gas boosters which cover a range of from 5,000 to 1,500,000 cubic feet per hour, and if you are concerned with the movement of air or gas, ask us to send you Publication No. 5/7, a survey of the standard range of "TORNADO" high pressure blowing and exhausting fans.

* **LARGE ILLUSTRATION:** *42" type 9 double width double inlet gas boosters.*
DUTY: 1,095,000 cu. ft. per hour producer gas at 104°F. saturated, giving 28" w.g. differential over inlet and outlet connections taking 138 H.P.

SMALL ILLUSTRATION: *40" type 15 air blowers.*

DUTY:	Closed outlet	Delivery
Air quantity	nil	12830 c.f.m.
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Photograph by courtesy of Ascot Gas Water Heaters Ltd.

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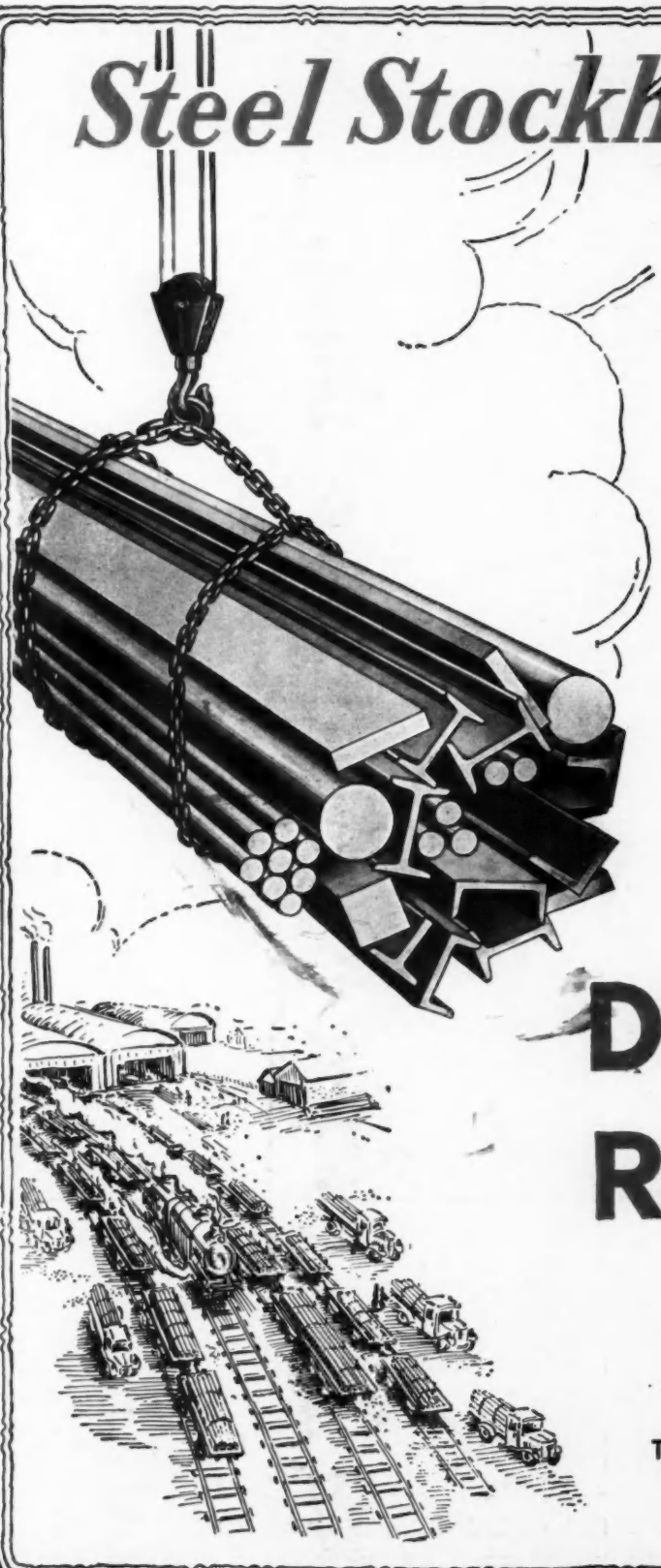

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